

Syracuse University

**SURFACE**

---

Higher Education - Dissertations

School of Education

---

5-2012

## The Impact of Curricular Learning Communities on Furthering the Engagement and Persistence Of Academically Underprepared Students at Community Colleges

Joshua Grant McIntosh  
*Syracuse University*

Follow this and additional works at: [https://surface.syr.edu/he\\_etd](https://surface.syr.edu/he_etd)

 Part of the [Education Commons](#)

---

### Recommended Citation

McIntosh, Joshua Grant, "The Impact of Curricular Learning Communities on Furthering the Engagement and Persistence Of Academically Underprepared Students at Community Colleges" (2012). *Higher Education - Dissertations*. 57.

[https://surface.syr.edu/he\\_etd/57](https://surface.syr.edu/he_etd/57)

This Dissertation is brought to you for free and open access by the School of Education at SURFACE. It has been accepted for inclusion in Higher Education - Dissertations by an authorized administrator of SURFACE. For more information, please contact [surface@syr.edu](mailto:surface@syr.edu).

## **Abstract**

This study examined the impact of basic skills curricular learning communities on academically underprepared community college students to determine if participation in such programs significantly contributed to student persistence from year one to year two. The conceptual framework that informed this study was Tinto's (1993) longitudinal model of student departure. In addition, the research on student engagement (Kuh, 2003b) served as a backdrop for considering how the basic skills curricular learning community programs may have influenced students' perceptions of their institution (support and encouragement) and their experiences (preparation, engagement with instructors, engagement with classmates, and feedback) and, in turn, contributed to student persistence.

Sponsored by the Lumina Foundation and the William and Flora Hewlett Foundation, this study served as the quantitative analysis for the Pathways to Student Success initiative (Engstrom & Tinto, 2007), a multi-institution sample that included both self-reported data, collected by the survey instrument, and enrollment data from the National Student Clearinghouse (NSC). The study included data from 13 community colleges with basic skills curricular learning community programs. All 13 colleges a) had a learning community program which linked a non-credit bearing basic skills course to at least one other course; b) had a learning community program for some duration and had institutional data to demonstrate its effectiveness in increasing student engagement and persistence; c) represented various types of structures and organization of programs to meet the needs of academically underprepared students; and d) served student populations considered at risk for not completing a degree/certificate. Each participating institution identified a learning community group and comparison (non-learning community) group to be surveyed in Fall 2003; in these comparison groups, the students'

academic skills and individual characteristics were to resemble those of students in the learning community group.

The use of a valid and reliable survey instrument allowed for analysis across institutions and group (learning community versus comparison groups). The survey instrument used in this study was a modified version of the Community College Survey of Student Engagement (CCSSE) instrument (CCSSE, 2010) which helped to measure participation in a variety of educationally purposeful activities and the supportive nature of the institutional environment, commonly referred to as engagement. Finally, persistence data, collected from the National Student Clearinghouse (NSC), was used to track student enrollment from one academic year to the next. The NSC is a non-profit organization that provides student degree and enrollment verification services. The survey data and persistence data were used to determine the effectiveness of curricular learning communities for academically underprepared students in meeting two primary objectives: to increase student engagement and to increase student persistence.

The results revealed no practical differences in levels of student engagement between basic skills curricular learning community and comparison group participants. One engagement variable—personal encouragement and support—significantly and positively contributed to student persistence from year one to year two. Being in a basic skills curricular learning community significantly and positively contributed to student persistence, with participants being 1.272 times more likely to persist than those students in the comparison group; however, the analysis did not allow for causal conclusions between curricular learning community participation, student engagement, and persistence. The inclusion of group (learning community or comparison group) and engagement variables in the logistic regression model did not

substantially increase correctly predicting student persistence. The results and limitations of this study suggest the need for continued research on basic skills curricular learning communities as an intervention strategy designed to strengthen the academic skills of underprepared students, facilitate student engagement, and foster student persistence.

THE IMPACT OF CURRICULAR LEARNING COMMUNITIES ON FURTHERING THE  
ENGAGEMENT AND PERSISTENCE OF ACADEMICALLY UNDERPREPARED STUDENTS  
AT COMMUNITY COLLEGES

By

Joshua Grant McIntosh  
B.A, Elon University, 1997  
M.A., Appalachian State University, 1999

Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in  
Higher Education Administration in the School of Education at Syracuse University

May 2012

© Copyright Joshua Grant McIntosh, 2012

All Rights Reserved

## **Acknowledgements**

I am deeply thankful for the faculty who served on my committee and provided continuous guidance and insight on this study. I am particularly grateful to Cathy McHugh Engstrom, my Chair, for her continued investment in my development and this study. She always had the right thing to say to inspire and motivate me to continue to make progress on the dissertation. I am appreciative to Dawn Johnson who encouraged me to think critically about educational and public policy issues and who was constantly willing to respond to my many inquiries related to statistical analysis. To Timothy Eatman, thank you for always reminding me that social justice is intimately connected to educational opportunity. To my program advisor, Vincent Tinto, thank you for your advising and mentorship during my early years at Syracuse University.

Finally, to my Mother and Father who raised me to value the privilege of having educational opportunity. I am deeply grateful for your support, guidance, compassion, and love. Completing this study and my doctorate certainly would not have been possible without it.

## Table of Contents

Chapter 1: Introduction .....	1
Access, Persistence, and Attainment .....	1
Characteristics of Community College Students and Persistence .....	3
Prior Academic Preparation .....	4
Theoretical Models of Retention and Engagement .....	6
Curricular Learning Communities: An Intervention to Promote Engagement, Learning, and Persistence .....	8
Purpose of Study .....	9
Study Description .....	11
Definitions of Terms .....	12
Significance of Study .....	14
Organization of the Study .....	16
 Chapter 2: Review of the Literature .....	 17
Theoretical Framework of Student Departure .....	17
Application of Tinto's Model .....	28
Limitations of Tinto's Model .....	22
Access, Persistence, and Attainment .....	27
First-generation students .....	29
Socio-economic status (SES) .....	30
Race .....	32
Gender .....	35
Part-time students .....	36
Community Colleges: An Academic Context .....	37
The Academic Preparation Problem and Developmental Education .....	40
Historical Overview of Learning Communities .....	45
Learning Community Models .....	46
Learning Communities and Collaborative Learning .....	50
Learning Communities, Student Engagement, and Student Persistence .....	53
Learning Communities and Developmental Education .....	55
 Chapter 3: Methods .....	 59
Research Questions and Hypotheses .....	59
Study Design and Conceptual Framework .....	60
Dataset .....	61
Program Selection .....	61
Instrumentation .....	63
Design .....	63
Reliability and validity .....	64
Data Collection .....	66
Questionnaire .....	66
Persistence data .....	66
Sample .....	67
Sociodemographic Variables .....	72



Identifying Composite Measures .....	73
Extraction and rotation.....	73
Missing values .....	74
Selecting single-item measures.....	74
Selecting factors.....	75
Conceptual factors .....	75
Persistence, Group, and Institutional Variables.....	78
Summary of Variables and Relationship to Theoretical Model.....	78
Data Analysis .....	79
Descriptive and bivariate analysis for sociodemographic variables and persistence .....	80
Factor analysis.....	80
Descriptive and nonparametric analysis for single-item measures and factors .....	81
Multivariate analysis.....	82
Limitations .....	87
Chapter 4: Results.....	89
Demographic Characteristics.....	90
Persistence and Attrition Rates.....	95
Results of principal component analysis.....	95
Nonparametric Analysis for Engagement Single-Item Measures and Factors .....	102
Single-item measures.....	102
Factors.....	111
Predicting Student Persistence.....	112
Chapter 5: Conclusion.....	123
Summary of Findings.....	125
Pre-entry attributes.....	127
Curricular learning community participation, institutional experiences, and integration ..	130
Curricular learning community participation, dimensions of engagement, and persistence.....	134
Implications.....	138
Implications for practice .....	138
Implications for future research .....	142
Limitations .....	146
Conclusion .....	148
Appendix A: Pathways to Student Success Advisory Board.....	150
Appendix B: Pathways to Student Success Survey Instrument.....	151
Appendix C: IRB Approval .....	159
References.....	160
Curriculum Vita .....	189

## List of Tables and Figures

Figure 2.1	Tinto's (1993) Longitudinal Model of Student Departure
Figure 2.2	Yosso's (2005) Model of Community Cultural Wealth
Figure 2.3	Smith's, et al. (2004) Core Practices in Learning Communities
Table 3.1	Institutions Participating in Pathways to Student Success
Table 3.2	CCSSE Reliability Measures
Table 3.3	Summary of Sample and Survey Respondents by College and Group
Table 3.4	Conceptual Factors to Measure Preparation, Engagement with Instructors, Engagement with Classmates, Feedback, Academic Encouragement and Support, and Personal Encouragement and Support
Figure 3.1	Summary of Variables in Study and Relationship to Tinto's (1993) Conceptual Model
Table 3.5	Logistic Regression Models to Determine the Impact of Learning Community Participation and Engagement on Persistence from Year One to Year Two
Table 4.1	Summary of Learning Community Group and Comparison Group Characteristics
Table 4.2	Chi-Square Distribution of Significant Differences by Group on Selected Demographic Characteristics
Table 4.3	Summary of Group Persistence and Attrition Rates and Chi-Square Results
Table 4.4	Oblique Promax Rotation Factor Loadings from Principal Component Analysis for Preparation (PREP)
Table 4.5	Oblique Promax Rotation Factor Loadings from Principal Component Analysis for Engagement with Instructor (ENGIN), Engagement with Classmates (ENGCLM), and Feedback (FEED)
Table 4.6	Oblique Promax Rotation Factor Loadings from Principal Component Analysis for Academic Encouragement and Support (AES) and Personal Encouragement and Support (PES)
Table 4.7	Summary of Independent Samples t-Test Results for Single-Item Measures for PREP by Group
Table 4.8	Summary of Independent Samples t-Test Results for Single-Item Measures for ENGIN, ENGCLM, and FEED by Group
Table 4.9	Summary of Independent Samples t-Test Results for Single-Item Measures for AES and PES by Group
Table 4.10	Summary of Independent Samples t-Test Results for Factor by Group
Table 4.11	Summary of Logistic Regression on Persistence to the Following Fall Semester

## Chapter 1: Introduction

A commonly understood, and often assumed, goal of higher education is to create educated citizens who can support and advance society. The benefits of postsecondary education, however, are far more extensive. The individual, or personal, benefits include higher earnings across all racial/ethnic groups and for both genders and an increased likelihood of receiving employer-provided health insurance (Goan & Cunningham, 2006); in addition, the income gap between high school graduates and college graduates has increased significantly over time, indicating the ever-increasing personal benefits of postsecondary education (Baum & Ma, 2007). The benefits of postsecondary education do not rest solely with the individual. In fact, society benefits in many ways, including lower levels of unemployment and poverty, increased tax revenues, less demand on social services, healthier lifestyles, and increased civic participation (Baum & Ma, 2007).

### **Access, Persistence, and Attainment**

Given the measurable benefits of higher education, the last several decades have seen an ever-increasing focus on access to postsecondary education. Studies have indicated that this access has broadened significantly to include more women (Ramani, Gilbertson, Fox, & Provasnik, 2007), older students (Snyder, Dillow, & Hoffman, 2009), and people of color (Planty, Provasnik, Hussar, & Snyder, 2007). However, significant differences in enrollment patterns based on these same characteristics remain (Planty et al., 2007; Ramani et al., 2007; Snyder et al., 2009). Increasing access to postsecondary education alone is not sufficient. Any serious effort to address social disparities and to widen the range of people who become educated will have to consider both *access* to and degree/certificate *attainment* in postsecondary education. Further, success in higher education, defined as persisting to attain a certificate or

degree, is not simply an individual responsibility, but also a *shared* one between the student and the institution.

Students must first be presented with educational access before they have the chance to succeed. According to the National Center for Public Policy in Higher Education (2004), out of every 100 students who entered ninth grade, 68 graduated from high school, 40 immediately entered college, 27 remained enrolled after their sophomore year, and 18 completed some type of postsecondary education within six years after graduation. Of college students who began postsecondary education at a four-year institution, about three quarters persisted to the second year, compared to only half of students who began at a two-year institution (McIntosh & Rouse, 2009). In addition, students who began postsecondary education at a four-year institution were twice as likely to attain a degree/certificate than their counterparts at two-year institutions (McIntosh & Rouse, 2009). The evidence demonstrates that too many students are not meeting their full educational potential, particularly those students at community colleges.

Many studies have provided insight on the variables that influence student persistence in college, and these variables fit broadly into two categories: student characteristics and institutional characteristics. Student characteristics include race/ethnicity, gender, socioeconomic status, status as first-generation college student or part-time student, and academic preparedness. Differences in degree/certificate attainment continue to exist across these categories, with persistence and success in higher education being related to a student's characteristics (Planty et al., 2007; Provasnik & Planty, 2008; Rooney, Hussar, Choy, Hampden-Thompson, Provasnik, & Fox, 2006).

Institutional characteristics include the type of institution (e.g. four-year versus two-year), its mission, and how its curriculum is organized. Given the influence these characteristics

can have on persistence, a number of researchers have attempted to better understand these inequities and the student and institutional characteristics that positively influence student persistence and attainment (Bailey, 2005; Bailey & Alfonso, 2005; Bailey, Leinbach, & Jenkins, 2006; Cohen & Brawer, 1996; Dougherty & Reid, 2007; Parsad & Lewis, 2003; Provasnik & Planty, 2008). Their findings have suggested that community colleges occupy a unique position for addressing the problem of student persistence because of who attends community colleges and the lower persistence rates of community college students.

### **Characteristics of Community College Students and Persistence**

Community college students persist at lower rates than those at four-year institutions (Hoachlander, et al., 2003; McIntosh & Rouse, 2009; Planty, et al., 2007; Provasnik & Planty, 2008; Rooney, et al., 2006). Community colleges disproportionately enroll students who are of color, attending part time, the first in their family to attend college, and from low socioeconomic backgrounds (Planty, et al., 2007; Snyder, et al., 2009). All of these factors are negatively associated with student persistence (Bailey, Jenkins, & Leinbach, 2005; Cabrera, La Nasa, & Burkum, 2001; Hoachlander, Sikora, Horn, & Carroll, 2003; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006).

Being a person of color is a particularly significant factor for persistence: eight years after high school graduation, 72% of African American community college students, compared with 50% of white community college students, had not completed a certificate or associate's degree, or transferred elsewhere (Bailey, 2005). Latino students also had lower completion rates than white students: 18% of first-time community college Latino students completed an associate's degree within six years, compared to 23% of first-time community college white students (Bailey, 2005).

## **Prior Academic Preparation**

Adelman's research (1999, 2006) found a relationship between high school academic preparation (e.g. types of courses, academic rigor) and college retention and graduation. Many students enter higher education academically underprepared for college coursework and many fail in their attempt to earn a degree (Cabrera, et al., 2001). Cabrera (2001), using data from the high school class of 1982, studied the pathways to a four-year degree. As expected, those students who were highly prepared academically were more likely to enroll in four-year institutions than their counterparts who had the least academic preparation (72% versus 16%). For academically underprepared students, institutional choice is frequently limited to community colleges. Among those students with the highest academic preparation who enrolled in four-year institutions, 78% graduated within 10 years. However, just 2.3% of those students who were poorly qualified and entered a two-year institution graduated in the same period of time. In another study, Adelman (1998, 2006) found that only 3.3% of students who were academically underprepared and enrolled at community college completed a bachelor's degree.

The evidence is clear: academic preparation matters. Not surprisingly, community colleges disproportionately enroll students who are academically underprepared (Planty, et al., 2007; Snyder, et al., 2009). Therefore, they have invested significant resources developing programs that strengthen academic skills in college so that students are prepared to complete college-level coursework (Adelman, 1999, 2006). Community colleges often do so by offering basic skills (or developmental education or remedial) courses, usually focused on reading, writing, and mathematics skills (Grubb, 1999). Institutions typically identify students who have been underserved by their high schools, and thus in need of developmental education, through the use of basic skills placement tests or by reviewing grades on courses taken in high school.

Using data from the National Education Longitudinal Study (NELS), Attewell, Lavin, Domina, and Levey (2006) found that 58% of students who attended community college took at least one basic skills course, 44% took between one and three courses, and 14% took more than three courses. However, these data underestimate academic underpreparedness, defined as the lack of academic skills necessary to perform college level coursework (Dzubak, 2005), since they only included students who actually enrolled in basic skills courses and not the others who should have enrolled in such courses but chose not to follow the recommendations of their institution.

The evidence about the success of these interventions is mixed. Of those community college students who did enroll in basic skills courses, less than one-quarter completed a degree/certificate (Attewell, et al., 2006). There is little evidence to indicate which types of developmental education programs or classes are most effective in supporting students development of academic skills and persistence to graduation (Levin & Calcagno, 2008). There is widespread agreement that the drill-and-skill technique is not effective, although it still appears to be the dominant approach to teaching developmental education courses (Grubb, 1999). In this teaching technique, the instructor usually presents the content matter, which the students then practice repetitively in order to master it. In contrast to this approach, curricular learning communities are being used to challenge this dominant approach to developmental education (Bloom & Sommo, 2005; Engstrom, 2008; Gabelnick, MacGregor, Matthews, & Smith, 1990; Levin & Calcagno, 2007; Malnarich, 2003; Smith, MacGregor, Matthews, & Gabelnick, 2004; Tinto, 1998).

## **Theoretical Models of Retention and Engagement**

Theoretical models have been developed to help educators better understand student departure and the conditions for student learning. In particular, Tinto's (1975, 1987, 1993) theoretical model on social and academic integration has framed the student persistence scholarship for the last three decades. Tinto's (1993) model posited that an individual's decision to depart an institution was the result of a longitudinal process consisting of interactions between the individual with given attributes and dispositions and members of the academic and social systems of the institution. These academic and social experiences were both formal and informal. Tinto argued that student's intentions and commitments were modified based on their experiences with the social and academic systems. The more integrated these experiences, the more likely students would persist. Educators have used Tinto's model to inform the design of programs and services that foster student persistence.

One central way in which students can be more fully integrated into various academic and social experiences is to be engaged in purposeful education activities or programs (Kuh, 2001). Student engagement, and those institutional practices that foster it, are important to student learning and persistence (CCSSE, 2002, 2009b; Kuh, 2003b; Kuh, et al., 2006; Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2007; Pascarella & Terenzini, 2005; Zhao & Kuh, 2004). Engagement requires individual student behavior *and* institutional practices designed to encourage students to participate in such behaviors (Kuh, 2001). Engagement suggests a shared responsibility—the institution is responsible for establishing practices that encourage student participation and the student must make the decision to actually participate in such practices. Student engagement is commonly used to summarize the ways that students are involved in educationally intentional activities or engagement benchmarks, such as active and collaborative



learning, student effort, academic challenge, student-faculty interaction, and support for learners (CCSSE, 2009a). These engagement benchmarks are often used to determine how well an institution creates environments to foster engagement (Kuh, 2003b). This engagement matters because it is positively associated with both student learning and persistence (Kuh, et al., 2008; Kuh, et al., 2007; Pascarella & Terenzini, 2005).

The research indicates that the college environment, and students' encounters with and responses to that environment, have an impact on college student success (Kuh, et al., 2006). College administrators and faculty should develop and implement institutional practices that positively influence student engagement and persistence (Kuh, et al., 2006). One challenge for community colleges is fostering engagement for typically a non-residential population of students who come to campus only to attend class and then leave (CCSSE, 2009b). In addition, the majority of community college students are attending part-time, a factor that is associated with being less engaged (CCSSE, 2009b). Limited time on campus also makes it particularly important for community colleges to foster student engagement in the classroom. Several studies have indicated that when instructors spent more time on interactive classroom approaches, student engagement increased (Cabrera et al., 2002; Cabrera & La Nasa, 2002; Cabrera, Nora, Bernal, Terenzini, & Pascarella, 1998; CCSSE, 2009b; Engstrom, 2008; Engstrom & Tinto, 2008; Tinto, 1997). Bailey et al. (2004) asserted that the classroom experience should be intentionally constructed to promote meaningful interaction between students and faculty by using collaborative learning strategies. This concept was underscored by Keup (2005) who suggested that the classroom may be the primary, or only, place for engagement, especially for community colleges where students are typically commuters.

## **Curricular Learning Communities: An Intervention to Promote Engagement, Learning, and Persistence**

Curricular learning communities involve an intentional restructuring of the curriculum, shared responsibility for learning among students, peers and faculty, and the introduction of active learning pedagogies. They have been found effective in increasing student engagement and persistence (Engstrom & Tinto, 2008; Kuh, et al., 2008; Smith, MacGregor, Matthews, & Gabelnick, 2004; Tinto, 1997; Tinto & Goodsell-Love, 1995; Zhao & Kuh, 2004). Kuh (2009) identified learning communities as a high-impact activity because they “demand that students devote considerable time and effort to purposeful tasks” (p. 6) and “put students in circumstances that essentially demand they interact with faculty and peers about substantive matters, typically, over extended periods of time” (p. 6). Tinto attributed learning community effectiveness to a variety of factors, including issues related to: (a) their ability to support students through the separation, transition, and incorporation process (Tinto, 1986); (b) the facilitation of academic and social integration (Tinto, 1993); and (c) the changing nature of relationships among students and faculty-student relationships in the construction of knowledge (Tinto, 1997). Curricular learning communities seek to address all three aforementioned factors.

Many community colleges have developed curricular learning community programs with the explicit intent of increasing engagement and persistence of academically underprepared students (Bailey & Alfonso, 2005; Bloom & Sommo, 2005; Tinto & Goodsell-Love, 1995). These learning communities link a non-credit bearing basic skills course with at least one other credit-bearing course. Instructors of the courses often collaborate on their course content to maximize the integration of course concepts and assignments (Engstrom, 2008; Smith, et al., 2004; Tinto, 1997, 1998). In addition, faculty use collaborative and active learning strategies to

facilitate more meaningful interactions among students and between students and faculty (Smith, et al., 2004; Tinto, 1998).

### **Purpose of Study**

Sponsored by the Lumina Foundation and the William and Flora Hewlett Foundation, and under the direction of Vincent Tinto and Cathy Engstrom, the purpose of this study was to determine if participating in a curricular learning community and student engagement significantly contributed to student persistence from year one to year two. More specifically, this study focused on academically underprepared community college students participating in basic skills curricular learning communities. Students who were identified as academically underprepared were enrolled in at least one basic skills (or developmental), non-credit bearing course (e.g., reading, writing, mathematics). Learning community students' basic skills class was linked to another basic skills or credit-bearing general education course (e.g., history, literature, computer science). Prior research by Parsad and Lewis (2003) found that 42% of all first-year community college students were enrolled in some form of developmental education and were not prepared to complete college-level coursework. As such, they were in need of stronger mathematics, reading, and/or writing skills. This, coupled with the fact that the majority of community college students do not persist to finish a certificate or degree program (Bailey, Calcagno, Jenkins, Kienzel, & Leinbach, 2005; Bailey, 2005; Bailey, et al., 2006; Provasnik & Planty, 2008) highlighted the need to investigate the effectiveness of these interventions in promoting college student success.

Bailey and Alfonso (2005) identified four gaps in understanding the effectiveness of persistence programs at community colleges: (a) most research in program effectiveness in postsecondary education was conducted at four-year colleges and the insights obtained from

these studies may not translate to community college student populations; (b) national datasets that allow for robust analysis of community colleges did not include data on institution-specific programs and practices that colleges used to increase student persistence; (c) most of the studies were institution-specific, making it hard to evaluate effectiveness across programs on different campuses; and (d) research on community colleges has not been distributed and discussed widely enough. This study was designed to address these current gaps in the literature as it used data from community college students, took into account an educational intervention program (curricular learning communities) designed to increase student persistence, and used data from multiple institutions.

Further, beyond the persistence problem, this study sought to determine if curricular learning communities could increase student engagement. First-generation students and low-SES students, which are overly represented in community colleges, are less likely to be engaged in social and academic experiences that foster student retention, including interacting with other students and faculty, studying in groups, participating in co-curricular activities, and using student support services (Astin, 1997; Cabrera, Nora, & Castaneda, 1992; Lohfink & Paulsen, 2005; Nunez, et al., 1998; Pascarella, et al., 2003; Pike & Kuh, 2005; Richardson & Skinner, 1992). These lower levels of engagement underscore the need to identify program interventions that successfully increase student engagement, and, in turn, increase student persistence.

### **Research Questions**

To further understand the impact that learning communities can have on academically underprepared students, this study aimed to answer two research questions:

1. Does participation in a basic skills curricular learning community, when compared to those not participating in a learning community, contribute significantly to the persistence of academically underprepared community college students from year one to year two?
2. Do dimensions of engagement (preparation, engagement with instructors, engagement with classmates, feedback, academic encouragement and support, and personal encouragement and support) contribute significantly to the persistence of academically underprepared community college students from academic year one to year two?

### **Study Description**

This study used survey and persistence data from the Pathways to Student Success study (Tinto & Engstrom, 2010), in which thirteen community colleges participated. Four criteria were used to select the 13 colleges that participated in this study. All 13 colleges a) had a learning community program which linked a non-credit bearing basic skills course to at least one other basic skills or general education course; b) had a learning community program for some duration and had institutional data to demonstrate its effectiveness in increasing student engagement and persistence; c) represented various types of structures and organization of programs to meet the needs of academically underprepared students; and d) served student populations considered at risk for not completing a degree/certificate. Each participating institution identified a learning community group and comparison (non-learning community) group to be surveyed in Fall 2003; in these comparison groups, the students' academic skills and individual characteristics were to resemble those of students in the learning community group.

The use of a valid and reliable survey instrument allowed for analysis across institutions and group (learning community versus comparison groups). The survey instrument used in this study was a modified version of the Community College Survey of Student Engagement

instrument (CCSSE, 2010) which helped to measure participation in a variety of educationally purposeful activities and the supportive nature of the institutional environment, commonly referred to as engagement. Finally, persistence data, collected from the National Student Clearinghouse (NSC), was used to track student enrollment from one academic year to the next. The NSC is a non-profit organization that provides student degree and enrollment verification services. The survey data and persistence data were used to determine the effectiveness of curricular learning communities for academically underprepared students in meeting two primary objectives: to increase student engagement and to increase student persistence.

### **Definitions of Terms**

Academically Underprepared	A student whose academic skills are perceived to be below those determined necessary to successfully complete college level coursework (Dzubak, 2005). This assessment is often determined by student placement test scores.
Attainment	A student completes a program and receives a credential (e.g. certificate, associate's degree, etc.) (Berkner, Horn, Clune, & Carroll, 2000).
Attrition	A student withdraws from an institution without completing a program and therefore does not earn a credential (Ewell, 1984).
Basic Skills Courses	A course designed to provide students with foundation skills in reading, writing, and

mathematics to prepare them for college level coursework (Boylan, 1995).

Curricular Learning Community

A group of students who co-register in two or more linked courses with increased collaboration and partnerships to foster shared knowledge, shared knowing, and shared responsibility (Levin & Calcagno, 2008; Smith, MacGregor, Matthews, & Gabelnick, 1997; Tinto, 1997).

Developmental Education or Remedial Education

A program intended to help students who initially do not have the academic skills they need to perform at a level that the college determines to be appropriate for them to develop such academic skills (Grubb, 1999).

Dropout

A student who leaves the institution without completing a program and never returns for additional study (Beal & Noel, 1980).

Engagement

The time and energy a student devotes to educationally purposeful activities, in and out of the classroom, and the policies and practices college/universities use to induce students to participate in these activities (Kuh, 2003b).

Persistence

A student has continued anywhere in postsecondary education, including transferring from one institution to another (Berkner, et al., 2000).

### **Significance of Study**

The importance of community colleges taking the leadership in promoting student success and producing college graduates was underscored at the first-ever White House Summit on Community Colleges on October 5, 2010. President Barack Obama argued:

These are the places where young people can continue their education without taking on a lot of debt. These are the places where workers can gain new skills to move up in their careers. These are the places where anyone with a desire to learn and to grow can take a chance on a brighter future for themselves and their families...And community colleges aren't just the key to the future of their students. They're also one of the keys to the future of our country. We are in a global competition to lead in the growth industries of the 21<sup>st</sup> century. And that leadership depends on a well-educated, highly skilled workforce. We know, for example, that in the coming years, jobs requiring at least an associate's degree are going to grow twice as fast as jobs that don't require college. We will not fill those jobs—or keep those jobs on our shores—without community colleges.

Although community colleges, with their open enrollment practices, cannot control the individual attributes and characteristics of their students, they can shape the institutional environment and practices that support student engagement and persistence. However, to accomplish Obama's goals, effective strategies for addressing the academic preparation and persistence problems must be identified. This study focuses on examining the impact of one



promising intervention, namely the use of curricular learning communities with academically underprepared community college students.

At this point, the research is mixed regarding the effectiveness of basic skills or developmental education programs (BHEP, 2007; Stoutland & Coles, 2009). The financial impact of these programs on students and institutions also is not trivial. These courses are costly for students because they rarely confer college credit but are debited against their financial aid allotments. Breneman and Harlow (1998) estimated that public colleges spent between \$1 billion and \$2 billion each year on developmental education programs. These institutions, of course, received funding from the state and thus taxpayers were contributing the monies to support these programs (Goan & Cunningham, 2006). This study contributes to a scant literature related to the effectiveness of curricular learning communities for academically underprepared students from multiple community colleges for promoting student persistence. It also teases out how the various factors of engagement manifest in these programs compared to non-learning community peers early in students' academic careers.

Methodologically, the majority of studies have been cross-sectional, with relatively few longitudinal panel studies; therefore a significant limitation to all of these studies has been the inability to track those students who did not re-enroll at the same institution, but did enroll elsewhere. Previous studies have classified these individuals as dropouts, when in fact they may have been continuing their education at another institution. This study addresses these limitations. Finally, another considerable limitation of learning community studies is the lack of a validated and reliable instrument to study the effectiveness of learning communities, which makes the comparison of institutional-specific studies difficult, if not impossible. As a result of these gaps in the research, community colleges continue to struggle to identify and implement

developmental education programs that have proven to be effective at increasing student engagement and persistence (Calcagno & Long, 2008; Pascarella & Terenzini, 2005).

### **Organization of the Study**

Chapter 1 provided an introduction to the current research literature related to access, persistence, and attainment as well as academic underpreparedness, student engagement, and basic skills curricular learning communities as a strategy to increase student engagement and persistence. Further, this chapter outlined how this study was designed to fill a gap in the research literature in an effort to expand our understanding of the effectiveness of basic skills curricular learning communities for academically underprepared students. Chapter 2 reviews the research literature and theory associated with studying student persistence. It provides an explanation and critique of Tinto's (1993) longitudinal model of student departure, and a review of the literature related to developmental education and learning communities. Chapter 3 provides a discussion of the methods used in constructing this study, including a discussion of the logic of method choice, dataset, program selection, and data analysis methods. Chapter 4 reports the results of the data analysis, sharing the demographic characteristics of participants, persistence and attrition rates, levels of engagement, and the results of the regression models used to predict student persistence. Finally, Chapter 5 summarizes the study findings and examines the implications for this work for future research. Implications for practice and limitations of the study are also explored.

## **Chapter 2: Review of the Literature**

This section provides an overview of research related to student retention and attainment, community colleges, and the use of learning communities in community colleges to increase student engagement and persistence. This review aims to provide insight in eight specific areas: a theoretical framework for student departure; college access, retention, and degree attainment; community colleges as an academic context; the academic preparation problem and developmental education; the history of learning communities; learning community models; the impact such communities have on student engagement and retention; and their in developmental education.

### **Theoretical Framework of Student Departure**

Tinto (1975, 1987, 1993) developed a longitudinal model of student departure (see Figure 2.1) which has been widely used as a foundation for student retention and persistence research efforts. This model was based on the work of Van Genepp (1960), an anthropologist, who studied the rites of passage in tribal communities and was primarily interested in understanding the movement of individuals and communities through time and identified what promoted social stability during times of change. More specifically, Van Genepp (1960) focused on the movement of individuals from membership in one group to membership in another group and he identified three rites of passage associated with this process: separation, transition, and incorporation. Separation was defined by a person breaking away from past associations and declining interactions with members of the group from which the person was separating. Transition represented the period of time in which an individual began interacting in new ways with members of the new group in which membership was sought and began developing the knowledge and skills necessary to fulfill their role in the new group. Lastly, incorporation

involved an individual interacting in new ways with members of the new group and establishing competent membership in the group. Van Gennep (1960) believed that the rites of passage concept could be applied to a variety of contexts where a person moved from one group to another.

Tinto's (1975, 1987, 1993) interactionalist model described student departure from the perspective of the social and intellectual context of the institution, which was a formal and informal interactional environment. The model posited that an individual's decision to depart an institution was the result of a longitudinal process consisting of interactions between the individual with given attributes (e.g., family background, skills, abilities, prior schooling) and dispositions (e.g., intentions and commitments) and members of the academic and social systems of the institution (Tinto, 1993). These academic and social experiences were both formal (e.g., classroom, academic performance, extracurricular activities, etc.) and informal (e.g., out-of class faculty and staff interactions, and interactions with peers). Tinto argued that student's intentions and commitments were modified based on their experiences with the social and academic systems, and the more integrated these experiences, the more likely it would reinforce their persistence by heightening their intentions and commitments related to the goal of completing college at the institution. The opposite also existed—the more segmented or negative their experiences with the social and academic systems, the more likely it was that their intentions and commitments to completing college were weakened. Similar to Van Gennep (1960), Tinto emphasized that integration into an institution was strengthened if students broke away from their home communities to become immersed in the academic and social aspects of college life. Tinto argued that it was through social and academic interactions students derived a sense of belonging, or lack of belonging, to the institution and that with sufficient social and academic

integration, students would persist. However, even with sufficient integration, external commitments or changing goals/commitments could result in a student deciding to depart an institution.

Tinto's initial model (1975) was established based on a review of the literature about student departure from higher education and was not developed from empirical evidence. The model described student experiences in the academic and social systems of the institution that interacted with one another. Tinto asserted that interactions within each of these systems would result in some degree of academic and social integration. In his revised model (1993), he described social and academic integration as "some type of social and/or intellectual membership in at least one college community" (p. 121). Early empirical studies of Tinto's theory suggested its relevance to predicting student persistence.

### **Application of Tinto's Model**

Pascarella and Terenzini (1983) studied first-year students at one residential institution for one year. Their study sought to understand whether the academic and social integration concepts were compensatory whereby if one aspect was more important, the other would be less important in explaining first-year student persistence. They also sought to understand if academic and social integration, and its influence on student persistence, differed for men and women. To measure academic integration they used variables including GPA, perceived intellectual development, non-class discussions with faculty, and perception of faculty concern. To measure social integration they used variables including participation in extracurricular activities, relationships with peers, and out-of-class contact with faculty. The results of their study suggested that "the constructs outlined in Tinto's model have reasonable predictive power in explaining variance in freshman year persistence/voluntary withdrawal decisions" (p. 224).

Further, they found that academic and social integration were mutually compensatory, with academic integration being more important than social integration for men's persistence and social integration being more important than academic integration for women's persistence.

Pascarella and Chapman (1983) studied the validity of Tinto's model related to different types of institutions (four-year residential, four-year commuter, and two-year commuter institutions). To measure dimensions of academic and social integration, they used a variety of variables, including the following to measure academic integration: first-semester GPA, expected second-semester GPA, hours spent studying, frequency of contact with faculty for academic topics, and frequency of conversations with peers on academic topics. In addition, they included social integration measures such as participation in extracurricular activities and social activities, number of friends on campus, dating on campus, frequency of peer conversations, and informal conversations with faculty. In this study, they found that academic integration was more important for student persistence at commuter institutions, while social integration was more important for persistence at four-year residential institutions.

Stage (1989a, 1989b) also studied Tinto's model; however, she used different measures of academic and social integration. To measure academic integration, she used GPA, credits earned in first semester, hours doing academic extracurricular activities, and responses to the Academic Development Scale and the Faculty Concern Scale. To measure social integration, she used residency on campus, campus employment, hours participating in social activities, hours participating in athletics, and responses to the Peer Group Relations Scale and Informal Faculty Relations Scale. The scales used in this study were developed by Pascarella and Terenzini (1983) to measure students' feelings about their experiences and relationships with other students and faculty. Studying 313 students at a four-year public institution, Stage (1989b)

examined whether academic and social integration influenced each other and she found that for men, more academic integration resulted in more social integration, and the opposite was true for women.

Nora (1987) was one of the first early studies to examine the relevance of Tinto's theory for students of color at two-year institutions. Previous studies had been dominated by disproportionately White students and were more focused on four-year institutions. In his study, Nora (1987) examined the relevance of Tinto's theory for 227 Chicano students attending three community colleges. His measurements for academic integration included career preparation, perceptions about academic experiences, and perceptions about faculty members, counselors, and administrators. Social integration was measured by contact with faculty members, counselors and peers. Unlike previous studies, (Pascarella & Chapman, 1983; Pascarella & Terenzini, 1983), he found no relationship between social integration and persistence and only a minimal relationship between academic integration and persistence. He asserted that the results of studies focused on White students and four-year residential institutions may not be transferable to students of color at community colleges and suggested that institutions focus research efforts on studying the effectiveness of interventions or programs directed at preparing them for college-level coursework since many of the students in his study were academically underprepared. The findings of this study also suggested the need to further examine the relevance of Tinto's model for specific institution types and populations.

While some of these early studies suggested that academic and social integration positively contributed to student persistence, a variety of variables were used to measure these two dimensions of integration. These studies also focused on student behaviors and did not include variables related to institutional practices, programs, or services that could potentially

influence student behavior—suggesting that there was not a shared responsibility for student persistence. Further, Nora’s (1987) findings also demonstrated the need to further study the relevance of Tinto’s model for students of color—especially those at community colleges.

### **Limitations of Tinto’s Model**

The majority of persistence studies examining Tinto’s model have been conducted among students at four-year universities (Cabrera, Nora, & Castaneda, 1993; Pascarella & Terenzini, 2005). When students arrive on the college campus, they face many challenges, some of them unique to the institutional context. Several characteristics of community colleges make them unlike four-year residential institutions. Students attending a community college, fairly close to their home community, are less likely to experience the intense feelings of separation often associated with moving to a four-year residential institution. At the same time, they are more likely to experience their personal and college lives as two distinct and separate identities and may need to work harder to transition into the social and academic communities at community colleges (Fogarty et al., 2003). They may also find it a challenge to understand and adopt the norms appropriate to the college setting and to competently establish membership in the social and intellectual communities of college (Tinto, 1986). Tinto (1997) argued that being a member of the social and intellectual communities was the mark of being integrated into the college. Since most students enrolled at community colleges are commuters, they are more likely to struggle to become incorporated into the college, a place where they may show up just long enough to attend classes and then leave (Fogarty, et al., 2003). While students are in the stage of becoming incorporated, they may encounter challenges that will lead to their deciding to depart college. Given the lack of research examining Tinto’s model for community college students, caution should be used when applying Tinto’s model to such students.



Many researchers have challenged and criticized Tinto's model of student departure and many of the critiques are centered on the cultural limitations of Tinto's model (Attinasi, 1989; Bean & Metzner, 1985; Guiffrida, 2006; Kraemer, 1997; Nora, 2001-2002; Rendon, Jalomo, & Nora, 2000; Tierney, 1992). Tierney (1992) argued that Van Gennep's (1960) theory, which served as a foundation for Tinto's model, was problematic because of the concept of breaking away, or separation. Tierney suggested that it was not applicable to students of color because it described progression *within* a culture instead of assimilation from one culture to another. Since many students' cultural backgrounds differed from the Eurocentric frameworks which served as the foundation for norms and values at predominantly White colleges and universities, Tierney asserted that this mistaken use of Van Gennep's theory may be potentially detrimental to students of color since it suggested that these students needed to separate from their culture and supportive relationships. Tierney's assertion has been supported by other researchers whose findings suggested that Tinto's model failed to successfully explain the role of family, or external communities, in supporting students once they were in college, with several studies demonstrating that students of color benefited greatly from the support of external communities (Cabrera et al., 1999; Delgado Bernal, 2002; Gloria et al., 1999; Guiffrida, 2004, 2005; Hendricks et al., 1996; Hurtado, Carter & Spuler, 1996; Nora & Cabrera, 1996; Rosas & Hambrick, 2002). Tierney argued for more inclusive research in this area whereby specific groups based on race, gender, and class were studied and the notion of separation and integration could be critically examined.

Tierney (1992) also critiqued the individualist perspective being used to explain student departure. He stressed the need to reframe the problem of student departure as an institutional problem, rather than a student problem. In line with this reframing, Tierney (1999) later asserted

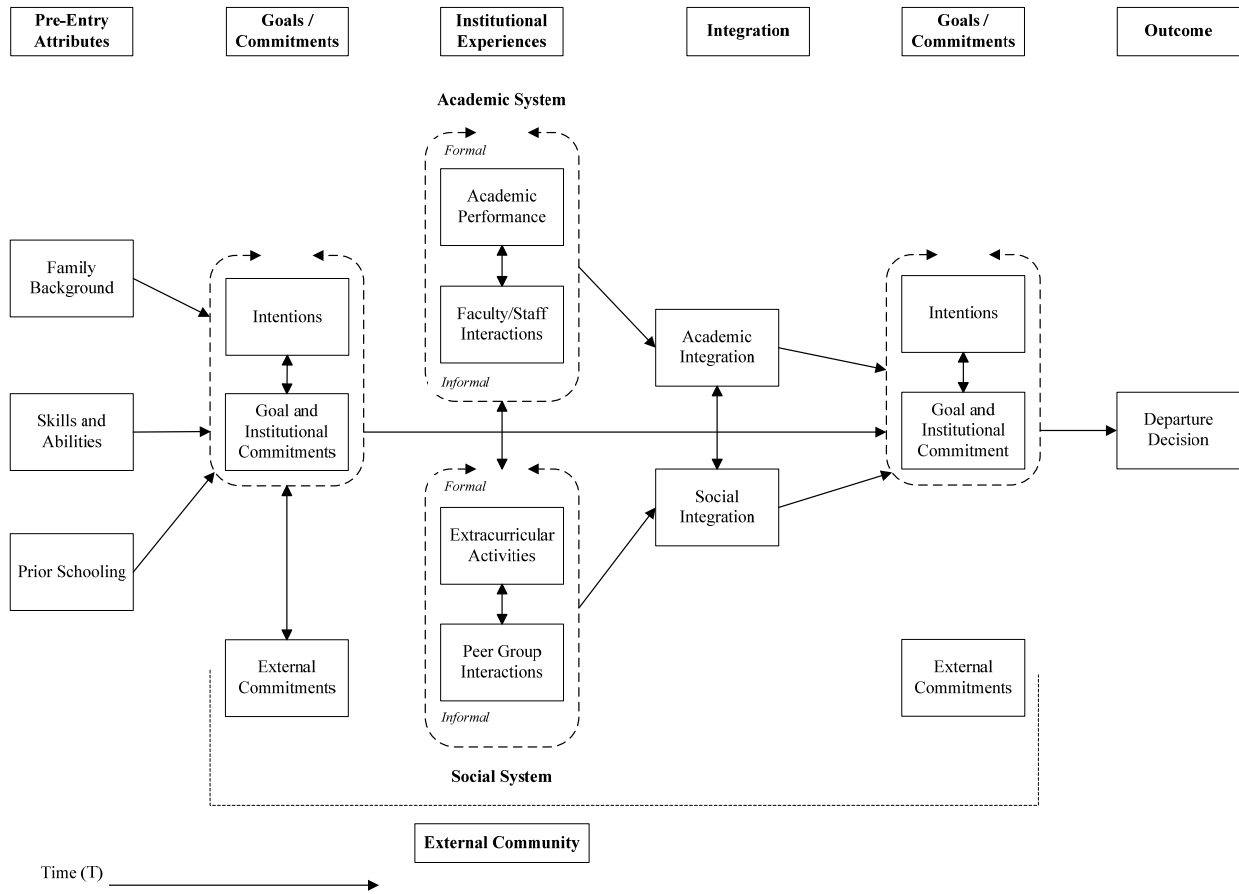
that institutions should practice cultural integrity, which he described as “programs and teaching strategies that engage students’ racial/ethnic backgrounds in a positive manner toward the development of more relevant pedagogies and learning activities” (p.84). He also asserted that there was a need to expand the concepts of social and academic integration as to not assume the need for cultural assimilation in order to be integrated into the institution. Kuh and Love (2000) also criticized Tinto’s model for the using the term integration. They asserted that integration suggested that students needed to be socialized into the dominant culture of the insitution while also relinquishing their previous cultures. They recommended using the term “connection” which did not imply the need to break away from a previous group or community.

Following Tierney’s lead, Rendon, Jalomo, and Nora (2000) asserted that the integration concept of Tinto’s model ignored the ability for students of color to be successful in college while being members of both the minority and majority cultures. They argued for a dual socialization model of student persistence, which would explain how students could function in both their cultural and institutional environments. Rendon, et al. (2000), like Tierney, criticized Tinto’s (1975) original model for being an assimilation model that did not adequately describe the persistence of students of color. While Rendon, et al. (2000) indicated that Tinto’s (1993) revised model was an improvement because it focused on membership in, rather than assimilation into, the institution, they continued to assert the need for the institutions to be transformed to reflect their multicultural populations, providing more than sub-communities for students of color, and the need for institutions to take a *shared* responsibility approach to student persistence—transforming institutional practices and programs to increase student engagement.

Although many researchers have challenged Tinto’s model of student departure, it remains a fundamental theory in describing and researching student retention. Tinto’s

theoretical framework has been used to help understand those experiences that influence a student's decision to depart an institution and has guided retention efforts for the past 30 years (Braxton, Milem, & Sullivan, 2000; Metz, 2004-2005). Tinto's (2002, 2004) continued work related to student retention describes a sense of *shared responsibility* for student success. The students must have the necessary intentions and commitments and the institution must foster an environment in which students are encouraged to *engage* in both the academic and social systems of the college. Institutions have the responsibility of constructing the environment to foster both social and academic integration. Tinto's theory of student departure is particularly well suited for research related to learning community programs, which will be explored in more detail later, since they are designed to facilitate academic and social integration in the classroom with the explicit intention of increasing student engagement and persistence. Further, much of the research related to student engagement, and the impact of such engagement on student learning and persistence, has focused on understanding student's experiences with an institution's social and academic systems (Reason, 2009). This body of literature on student engagement in social and academic systems underscored the relevance of Tinto's model as a foundation for this study.

Figure 2.1. Tinto's (1993) Longitudinal Model of Student Departure



## **Access, Persistence, and Attainment**

Three key studies led and managed by the National Center for Education Statistics (NCES) at the U.S. Department of Education, have resulted in the creation of robust databases. Researchers commonly use these databases to better understand the national landscape for student access, retention, and attainment. These three studies are the National Education Longitudinal Study of 1988 (NELS: 88), the annual National Postsecondary Student Aid Study (NPSAS), and the Beginning Postsecondary Students Longitudinal Study of 1996/98, 1996/01, and 2004/09 (commonly referred to as BPS: 96/98, BPS: 96/01, and BPS: 04/09).

The NELS: 88 study consisted of a national representative sample of eighth graders first surveyed in 1988; a sample of these respondents were then resurveyed through four follow-ups in 1990, 1992, 1995, and 2000. This was the first major longitudinal study designed to provide trend data about the transitions students experienced as they left middle or junior high school, and progressed through high school and into postsecondary institutions or the work force. The NPSAS study was designed to create a comprehensive database on the financial aid provided by federal and state governments, postsecondary institutions, employers, and other agencies, along with student enrollment and demographic data. Finally, the BPS: 96/01 study followed multiple cohorts of students, drawn from the NPSAS database, who enrolled in postsecondary education for the first time. Data collected for this study included student persistence in, and completion of, postsecondary education degree and certificate programs, their transition to the workforce, and demographic information. The three databases maintained for these studies allowed for a broad range of analyses to further understand educational processes and outcomes.

Using data from these studies, Snyder, et al. (2009) found that between 1987 and 1997, enrollment in degree-granting institutions increased by 14%. Between 1997 and 2007,

enrollment increased by 26%, from 14.5 million students to 18.2 million students. Between 1995 and 2006, the enrollment of people aged 25 and older increased by 13% and that of students under age 25 by 33%. This trend is expected to continue: the NCES has predicted that between 2006 and 2017, enrollments of people 25 and older will rise by 19% and those of people under age 25 by 10%. Between 1996-97 and 2006-07, the number of associate's degrees granted increased by 27% and the number of bachelor's degrees by 30%. In addition to noting the general increase in access to and degree attainment in higher education, it is also important to understand who is attending college and how this has changed over time.

A report entitled *The Condition of Education* by Provasnik, Hussar, & Snyder (2007) provided significant insights into who was attending and succeeding in college through the use of multiple data sources, including the NELS: 88, NPSAS, and BPS: 96/01 and BPS: 04/09 databases. Between 1972 and 2005 the rate at which high school graduates enrolled in college in the fall immediately after high school graduation increased by 20%, from 49% to 69%. Between 1971 and 2006, the percentage of 25- to 29-year-olds who completed at least some college education rose from 34% to 58%.

The gap in immediate college enrollment between Blacks and Whites widened during the 1970s and 1980s, narrowed between 1999 and 2001, and now is widening again (Provasnik, Hussar, & Snyder, 2007). A similar gap in immediate college enrollment existed for Hispanics: it widened between 1979 and 1998 and again between 2002 and 2005. During this same period, the rate of immediate college enrollment for high school graduates rose more quickly for females than males. Between 1976-77 and 2004-05, students of color accounted for approximately half of the growth in the number of associate's and bachelor's degrees earned. Finally, in 2006, approximately 66% of White 25- to 29-year-olds had completed at least some college, compared

with 50% of their Black peers and 32% of their Hispanic peers, representing significant differences in who was achieving some level of success in college.

Planty et al. (2007) also looked at students who were employed while attending college. Between 1970 and 2005, the percentage of college students aged 16 to 25 who were employed increased from 34% to 39% and the number of hours worked per week also increased. In 2005, roughly 85% of all part-time students were employed but they worked fewer hours per week in 2005 than they did in 1970.

**First-generation students.** The weight of evidence indicates that first-generation students, those whose parents did not complete a college degree, are at a distinct disadvantage both in accessing postsecondary education and in completing a college degree or certificate program (Chen & Carroll, 2005; Choy, 2001; Horn, Nunez, & Bobbitt, 2000; Lohfink & Paulsen, 2005; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Pascarella, Wolniak, Pierson, & Terenzini, 2003; Pike & Kuh, 2005; Warburton, Bugarin, Nunez, & Carroll, 2001). In a comprehensive study, Horn, et al. (2000) found that after controlling for academic achievement, family structure (single parent versus two parents), family income, and other demographic characteristics, first-generation students were less likely than their counterparts to participate in academic programs leading to college enrollment; thus they were much less likely to enroll in college within two years of high school graduation. Horn, et al. (2000) also found that 27% of 1992 high school graduates were first-generation students, and half of these first-generation students were from low-income families, compared to less than one third of students whose parents had some postsecondary education and less than 1 in 10 students whose parents were college graduates.

Furthermore, using data from the BPS: 96/98 study, Warburton, et al. (2001) were able to demonstrate that in addition to the lower rates of participation and fewer financial resources, 27% of first-generation students attended part time and were also much more likely to work full time, compared to their peers whose parents had a college degree. Compared to those same peers, first-generation students were also less likely to be enrolled continuously or to attain a degree at their initial postsecondary institution, and more likely to have stopped out or left their first institution of enrollment.

First-generation students have several additional characteristics that reduce their likelihood of not completing a college degree or certificate program. Nunez, Cuccaro-Alamin, and Carroll (1998) identified several characteristics: first-generation students were more likely to be older, be married, have dependents, enroll at public two-year institutions, and attend part-time, compared to their non-first-generation counterparts. Thus, it is not simply being a first-generation student that accounts for the difference in degree/certificate attainment, but rather the other characteristics often associated with this population. Studies have also identified other ways in which first-generation students differ from their peers with college educated parents. Using data from the BPS: 96/01 study, Lohfink and Paulsen (2005) found that Hispanic first-generation students were 35% less likely to persist than White first-generation students, and that, for first-generation students, each \$10,000 increase in family income was associated with a 2% increase in the probability of persistence. Among students who overcome the challenges to access and enroll in postsecondary education, first-generation students remain at a distinct disadvantage with regard to staying enrolled and attaining a degree or certificate.

**Socio-economic status (SES).** Using data from two national study databases, NPSAS: 96 and BPS: 96/98, Choy and Bobbitt (2000) found that in 1995-96, 26% of all undergraduates



were low-income; that is, their family income was below 125% of the federally established poverty level for their family size. Many studies have supported the assertion that SES is associated with both access to and degree/certificate attainment in postsecondary education. To this point, several researchers have found that those in lower SES brackets are less likely to enroll in postsecondary education, and less likely to persist and/or earn a degree/certificate (Cabrera, La Nasa, et al., 2001; Choy & Bobbitt, 2000; Terenzini, Cabrera, & Bernal, 2001). Choy and Bobbitt (2000) compared groups of students by SES and found that by 1998, the low-income students who began postsecondary education in 1995-96 were less likely to still be enrolled and to have attained a degree/certificate, compared to wealthier peers. This trend remained even after the researchers controlled for demographics (gender, race, dependency status, and parent's education) and other variables that are often associated with persistence (institution type, enrollment delay after high school, amount worked, and borrowing).

Using data from the NCES, Terenzini, et al. (2001) were able to examine access and persistence differences for various SES categories and develop a profile of low-SES students. Of the high school graduates in the lowest SES quartile, 48% did not enroll in a postsecondary institution during the fall after graduation, compared to 11% of high-SES students. Of the low-SES students who entered college in 1989-90 and pursued a bachelor's degree, 24% had earned the degree five years later, compared to 51% of high-SES students. Low-SES students were also disproportionately represented in other academically underserved categories such as being a person of color, being first-generation, and growing up in a single-parent home. In addition, Terenzini, et al. (2001) found that low-SES students were arriving on campus less academically prepared than their high-SES counterparts. Finally, Bailey (2005), using data from NELS: 88, found that more than half of all traditional aged first-time undergraduates in the lowest two SES

quartiles were enrolled in community colleges, making it the most common type of institution among these student populations.

**Race.** Although the past several decades have seen more students of color accessing postsecondary education, significant disparities remain. Using data from the US Census Bureau and the NCES, Kelly (2005) conducted a thorough review of measures of educational equality related to ethnic minorities. Between the years 2005 and 2020, the Census Bureau expects considerable increases in the numbers of students of color enrolled in colleges: 77% more Hispanics, 69% more Asians, 32% more African Americans, 26% more Native Americans, and less than a one percent increase in the number of Whites. Interestingly, the majority of the growth will occur within those populations that remain the least educated. Latinos, African Americans, and Native Americans are disproportionately underrepresented at each stage of the educational pipeline, and this gap is widening, indicating that postsecondary institutions are doing a relatively poor job of addressing such disparities (Kelly, 2005). Whites and Asians persist to a degree or certificate at far greater rates than do Hispanics, African Americans, and Native Americans (Kelly, 2005).

Using data from the American College Testing Program, the College Board, the US Census Bureau, and the National Center for Education Statistics, Ramani, Gilbertson, Fox, and Provasnik (2007) further analyzed these educational disparities among racial/ethnic groups. Between 1976 and 2004, total undergraduate student of color enrollment increased from 17% to 32%. The most significant growth occurred among Hispanic students, whose enrollment increased by 372% during that period. In 2006, 66% of White 25-29 year olds had completed at least some college, compared with 50% of their Black counterparts and 32% of their Hispanic counterparts (Planty, et al., 2007). While both enrollment and persistence rates have increased,

significant disparities continue among racial groups (Kuh, et al., 2006). However, as has been discussed, this is not simply an issue of race, but rather represents the complexity of the various intersections of several characteristics such as race, first-generation student status, socio-economic status, and academic preparation. Further, it is important to note that students of color should not be viewed as somehow culturally deficient and in need of fixing.

To underscore the need to not see students of color as culturally deficient, it seems appropriate to discuss the work of Yosso (2005) who developed the Community Cultural Wealth model (see figure 2.2). Yosso (2005) challenged the work of Bourdieu and Passeron (1977) which focused on cultural capital, the accumulation of cultural knowledge, skills, and abilities possessed and inherited by privileged groups in society. Bourdieu and Passeron's (1977) work has been used to explain racial inequity and they asserted that cultural capital (i.e., language, education), social capital (i.e., connections, networks), and economic capital (e.g., possessions, money) could be acquired through formal schooling *and/or* one's family. In this assertion, the assumption was that some communities were culturally wealthy and others were culturally poor. Yosso (2005) suggested that an explanation of racial inequality, particularly around education, should not be viewed through a deficiency lens (some are culturally rich and some are culturally poor), but rather a more affirming lens—they are culturally different.

According to Yosso (2005), “a traditional view of cultural capital is defined as White, middle class values, and is more limited than wealth—one's accumulated assets and resources” (p. 77). However, this view is expanded by critical race theory (CRT) which focuses on the experiences of people of color and allows for accumulated assets and resources to be revealed. CRT stemmed from criticisms of the critical legal studies (CLS) movement in which scholars challenged the role of the legal system in “legitimizing oppressive social structures” (Yosso,

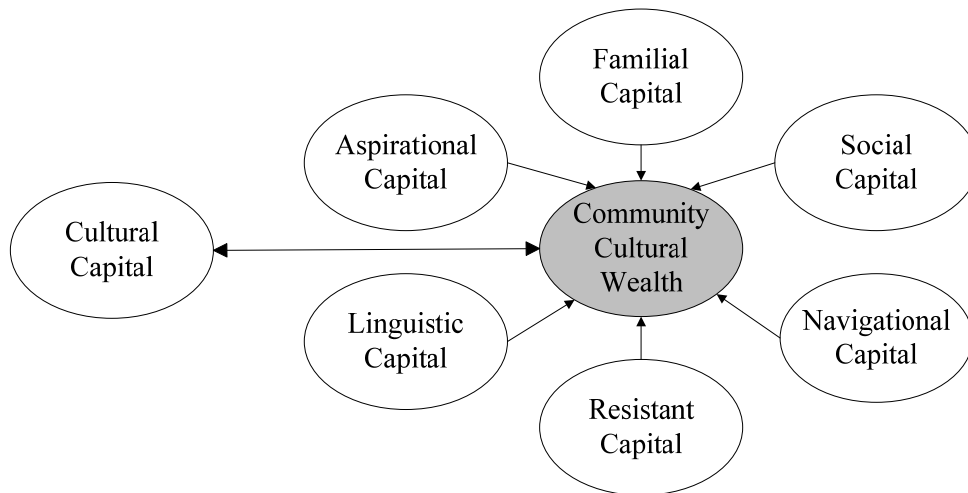
Parker, Solorzano, & Lynn, 2004, p. 2). These scholars argued that CLS failed to account for institutional racism, and as a result, restricted strategies for social transformation. They believed the legal framework of CLS restricted their ability to analyze racism (Crenshaw, 2002; Crenshaw, Gotanda, Peller, & Thomas, 1995; Delgado, 1989). Figure 2.2 illustrates that community cultural wealth is an array of abilities, skills, and knowledge possessed and used by people of color to resist oppression (Yosso, 2005). The CRT lens allows one to understand that cultural wealth is nurtured by people of color through six forms of capital—aspirational, navigational, social, linguistic, familial, and resistant capital. These forms of capital are not static or mutually exclusive, but instead they are dynamic processes that build upon each other as part of community cultural wealth. The following provides a description of these six forms of capital, as written by Yosso (2005):

1. *Aspirational capital* refers to the ability to maintain hopes and dreams for the future, even in the face of real and perceived barriers (p. 77).
2. *Linguistic capital* includes intellectual and social skills attained through communication experiences in more than one language and/or style (p. 78).
3. *Familial capital* refers to those cultural knowledges nurtured among kin that carry a sense of community history, memory, and cultural intuition (p. 79).
4. *Social capital* can be understood as networks of people and community resources (p. 79).
5. *Navigational capital* refers to skills of maneuvering through social institutions (p. 80).
6. *Resistant capital* refers to those knowledges and skills fostered through oppositional behavior that challenges inequality (p. 80).

Critical race theory scholars in education research the ways in which race and racism influence schooling structures and practices. Solorzano (1997, 1998) identified five tenets of

CRT in education: (1) intercentricity of race and racism with other forms of subordination; (2) challenge to dominant ideology; (3) commitment to social justice; (4) centrality of experiential knowledge; and (5) transdisciplinary perspective. CRT calls into question White middle class communities as the standard by which others are judged and identifies various types of capital that are rarely acknowledged as cultural and social assets in communities of color. This model suggests that students of color should not be viewed as, or researched from the perspective of, being deficient. As such, research on educational disparities between racial groups should take a more affirming approach.

Figure 2.2. Yosso's (2005) Model of Community Cultural Wealth



**Gender.** By 1980, the percentage of females enrolled as undergraduates exceeded the percentage of male undergraduates (Ramani, et al., 2007) and this continues today (Kuh, et al., 2006). Between 1970 and 2001, women went from being the minority to the majority of the undergraduate population, from 42% to 56% (Freeman, 2004). In 2004, females had higher enrollment rates across every race category and the gender gap was widest for Black students

(Ramani, et al., 2007). In addition to these changes in enrollment, women also surpassed their male counterparts in attaining degrees. Between 1980 and 2001, the percentage of associate's degrees awarded to women rose from 55% to 60% (Peter, Horn, & Carroll, 2005). In 1989-90, 42% of college-age men and 32% of college-age women attended college full-time but by 1999-2000 there was no significant difference between the numbers of men and women doing so: 53% of men and 51% of women (Peter, et al., 2005). However, women are still a disproportionate percentage of the students whose characteristics place them at risk for attaining a degree or certificate (Peter, et al., 2005). Specifically, they make up 60% of students in the lowest income quartile, 62% of students age 40 or older, 62% of students with dependents, and 69% of single parents. These characteristics are associated with lower retention and attainment rates in postsecondary education (Berkner, He, & Cataldi, 2002).

**Part-time students.** Part-time students constitute a large segment of the undergraduate population in postsecondary institutions (Hussar, 2005); in 2004, they represented 37% of all undergraduate enrollment (Rooney, et al., 2006). Part-time enrollment is associated with certain behaviors, such as being employed and stopping out, that may deter degree or certificate attainment (Berker, Horn, & Carroll, 2003; Berkner, et al., 2002; Carroll, 1989; O'Toole, Stratton, & Wetzel, 2003). Chen and Carroll (2007) utilized data from the 2003-04 NPSAS to provide a profile of part-time undergraduate enrollment as well as data from BPS: 96/01 to examine the relationship between part-time status, persistence, and degree completion. In summarizing some of their findings, they noted:

Exclusively part-time students differed from their full-time peers in many respects.

Compared with exclusively full-time students, exclusively part-time students tended to be older, female, Hispanic, financially independent, and first-generation students (i.e., their

parents did not attend college). They also tended to come from low-income families (for dependent students), had weaker academic preparation, and had lower expectations of postsecondary education. (p. iv)

Chen and Carroll (2007) noted that 64% of part-time students attended public two-year institutions, compared with 25% of full-time students. In addition, 83% of part-time students worked while enrolled, with 53% working full-time, and 47% considered themselves primarily employees, rather than students. The majority of full-time students (73%) also worked while enrolled; however, 23% of that total worked full-time and only 14% considered themselves primarily employees.

Finally, part-time enrollment has been negatively associated with degree/certificate attainment and persistence even when controlling for a variety of characteristics (Berker, et al., 2003; Berkner, et al., 2002; Carroll, 1989; Chen & Carroll, 2007; O'Toole, et al., 2003). More specifically, Chen and Carroll (2007) found that of those beginning students who attended exclusively part-time for the duration of their enrollment between 1995-96 and 2000-01, 15% had attained a degree/certificate, none had attained a bachelor's degree, 27% had persisted (either earned a degree/certificate or were enrolled), and 73% had not persisted. Of those who did not persist, 46% had dropped out during their first year. This is in contrast to the 64% of exclusively full-time students who had attained a degree/certificate, the 44% who had earned a bachelor's degree, the 72% who had persisted, and the 28% who had dropped out, and of those who dropped out, the 12% who had dropped out during their first year.

### **Community Colleges: An Academic Context**

In the United States, 1,045 community colleges enroll 6.2 million students, or 35% of all enrolled postsecondary students (Provasnik & Planty, 2008). Community colleges tend to have

multiple missions, which include: 1) collegiate education or academic transfer to four-year degree program, 2) career or vocational-technical education, 3) remedial or developmental education, 4) community service, 5) continuing education, and 6) general education (Cohen & Brawer, 1996). Using data from the Integrated Postsecondary Education Data System (IPEDS), Provasnik and Planty (2008) identified unique characteristics of community colleges. Four notable differences are who attends, their aspirations, retention rates, and the cost of attending.

Compared to four-year institutions, community colleges have a disproportionate percentage of students who are academically underprepared, nontraditional, low-income, and persons of color. The vast majority of traditionally aged community college students take basic skills courses as a part of their postsecondary education. In 2000, according to Parsad and Lewis (2003), 42% of all first-year community college students were taking some form of remediation, compared with 20% of entering students at four-year institutions. In addition, community colleges enrolled more of their first-time students in basic skills courses and they reported that on average those students were in remediation a longer time, compared with other types of institutions (Parsad & Lewis, 2003).

Using NELS: 88 data, Bailey (2005) found that of all community college students, 90% were in associate's degree programs, and the remaining 10% were in certificate programs. Of seniors who entered community college immediately following their high school graduation in 2004, about two-thirds planned to pursue a bachelor's degree or higher and the remaining one-third did not plan to pursue any education higher than an associate's degree (Provasnik & Planty, 2008). However, the data from the BPS: 96/01 study indicated much lower actual rates of degree attainment; six years later, only 36% of those students who initially enrolled at a community college had earned a certificate, an associate's degree, or bachelor's degree. The reality is that



the majority of community college students never finish a certificate or degree (Bailey, Calcagno, Jenkins, Kienzel, & Leinbach, 2005; Bailey, 2005; Bailey, et al., 2006; Provasnik & Planty, 2008). Finally, on average, annual tuition and fees at a community college are less than half those at public four-year institutions and one-tenth of those at private four-year institutions (Provasnik & Planty, 2008).

Given the disproportionate enrollment of academically underprepared students and high attrition rates, it is no surprise that the Lumina Foundation for Education has taken a keen interest in community colleges since the Foundation is committed to expanding student access to and success in college. *Achieving the Dream: Community Colleges Count* was a national initiative launched by the Lumina Foundation for Education in 2004. This initiative was designed to help “community colleges build learn how to collect and analyze student performance data in order to build a ‘culture of evidence’—a culture in which colleges routinely use solid evidence to develop institution-wide reform strategies that are aimed at helping their students succeed academically” (Rutschow, Richburg-Hayes, Brock, Orr, Cerna, Cullinan, Kerrigan, Jenkins,, Gooden, & Martin, 2011, xi). Participating colleges were expected to institute a five-part process for institutional reform: (a) secure leadership commitment; (b) use data to prioritize actions; (c) engage stakeholders; (d) implement, evaluate, and improve intervention strategies; and (e) establish a culture of continuous improvement (Rutschow, et al., 2011, ES-3). While today there are more than 130 community colleges participating in *Achieving the Dream*, the report issued in 2011 summarized the results of what has been learned from the first 26 community colleges (“Round 1” colleges) that initially joined the initiative in 2004-2005. During this five year period:

- many of the colleges made progress in creating a stronger culture of evidence—enhancing their leadership commitment, increasing their research initiatives, and developing a number of programs focused on strengthening student achievement;
- four out of five colleges implemented practices related to a strong culture of evidence;
- although colleges implemented a variety of strategies to strengthen student achievement, the majority of these reforms included less than 10 percent of the intended target populations, likely resulting in too few to demonstrate progress on strengthening student achievement;
- about 75 percent of the colleges indicated that the Achieving the Dream initiative had at least some influence in supporting them in developing a culture of evidence; and
- student outcome trends remained relatively the same, except for slight improvements in college English courses and the completion of courses attempted during the first two years.

While the Achieving the Dream initiative has shown progress in supporting community colleges in building a culture of evidence, much work remains in the development and implementation of strategies that strengthen student outcomes, including persistence.

### **The Academic Preparation Problem and Developmental Education**

A commitment to equitable educational opportunity presents an enormous challenge: many entering students, in both community colleges and four-year institutions, lack the academic preparation necessary to succeed in college. This problem is not a new one; it already existed in the seventeenth century when Harvard College assigned tutors to underprepared students studying Latin (Phipps, 1998). However, the increased demand for higher education in the twentieth century dramatically increased the need for “remedial,” or developmental, programs

(Long & Bettinger, 2005). Grubb (1999) described “remedial” education as “a class or activity intended to meet the needs of students who initially do not have the skills, experience or orientation necessary to perform at a level that the institution or instructors recognize as ‘regular’ for those students” (p. 174).

There is a controversy amongst scholars and practitioners about the appropriate term to use to describe programs focused on addressing academic underpreparedness. While “remedial education” and “developmental education” are often used interchangeably in the research literature, many prefer the use of “developmental education” as it does not have the deficiency connotations often associated with the term “remedial” which suggests that courses will help remedy, or fix, the student or a weakness exhibited by the student (Gordon, Hartigan, & Muttalib, 1996; Cassazza, 1999; Roueche & Roueche, 1999; Boylan, Bonham & Rodriguez, 2000). In contrast, “developmental education” incorporates human development theories and “emphasizes a series of major life choices and processes through which all students must pass” (Clowes, 1980, p. 9). Cassaza (1999) noted that developmental education can be differentiated from remedial education by four underlying assumptions: (a) it is a comprehensive process, looking at the learner holistically; (b) it focuses on the intellectual, social, and emotional growth of a learner, using theory to inform the process; (c) it assumes all learners have talents, and educators should identify and use them to support other areas; and (d) it is not limited to learners at any particular level. This description of developmental education seems particularly useful since there are differing standards and criteria that each institution uses to determine which courses and what students are categorized as “remedial” (Bettinger & Long, 2005). For the purposes of this study, the term “developmental” or “basic skills” will be used to describe courses taken by students to prepare them for college-level work. Exceptions to this will be

indicated by quotation marks being used for “remedial” to describe studies completed by other scholars.

Much of academic underpreparedness can be traced back to external variables over which students have little, or no, control, such as poverty. As McCabe (2000) pointed out, “Poverty has the highest correlation with educational underpreparedness at every level, from preschool to graduate school” (p. 12). Lack of academic preparedness and the need for basic skills education are associated with low-income students and students of color (Dougherty & Reid, 2007). Approximately 60% of all NELS: 88 community college students had experienced some developmental education during their first year, and for Black and Hispanic students, that percentage exceeded 75% (Bailey, 2005). A relationship also exists between SES and academic preparedness. Using data from the NELS: 92 study, Terenzini, et al. (2001) found that lowest-SES-quartile students who began postsecondary education in 1992 were less academically prepared than their highest-quartile peers. Also, compared to their highest-SES-quartile peers, the lowest-SES-quartile students were underrepresented in the upper two quartiles in all academic ability areas tested: social science areas (45% versus 79%), mathematics (44% versus 82%), reading (44% versus 78%), and science (39% versus 79%). To meet the needs of underprepared students, 98% of all public two-year institutions offer basic skills courses in reading, writing, and mathematics, more than any other type of institution (Parsad & Lewis, 2003).

Adelman (2006) used data from the NELS: 88/2000 cohort that consisted of a national sample of eighth graders in 1988 who were scheduled to be in the 12<sup>th</sup> grade and graduate from high school in 1992. They were followed through year 2000. This study demonstrated that the academic rigor of a “student’s high school curriculum still counts more than anything else in pre-

collegiate history in providing momentum toward completing a bachelor's degree" (Adelman, 2006, p. xviii). This study highlighted the great disparity in the academic intensity of high schools, which resulted in some groups of students being excluded from having this opportunity. For example, Latino and African-American students were less likely to attend high schools that offered calculus, trigonometry, or statistics (Adelman, 2006).

In addition, students from the lowest socio-economic quintile attended high schools that were much less likely to offer any math courses above Algebra 2 (Adelman, 2006). Given that the highest level of mathematics reached in high school was a key predictor of persistence in college, this data was particularly noteworthy (Adelman, 2006). This study illustrated the relationship between academic underpreparedness, race, socioeconomic status, and persistence in college. Many of these students simply could not access the courses they needed to arrive at college prepared to do college-level work.

Two studies from the Boston Higher Education Partnership, *From College Access to College Success* (BHEP, 2007) and *Who's Making It* (Stoutland & Coles, 2009), illustrated the issues associated with academic underpreparedness, "remedial" education, and persistence. To examine these issues, these researchers tracked the experiences and progress of Boston Public School students who graduated from high school in 2003, 2004, or 2005 and enrolled in college for the first time and full-time in Fall 2005. The first group of researchers (BHEP, 2007) found that over two-thirds of high school graduates who attended community colleges took basic skills courses; on average, those enrolled in basic skills courses withdrew or failed over 30% of the credits they attempted in the first year. In focus groups, these students reported being especially challenged by mathematics. In the second study, Stoutland and Coles (2009) examined three

educational outcomes: persistence, progress, and performance. Some of their findings provided keen insights into the academic preparation of Boston Public School students. The authors noted:

Students who had a more rigorous high school preparation or who attended colleges with higher academic admission requirements were more likely to be academically successful in college [and persist]...Exam school graduates had much higher rates of persistence, progress, and performance than their counterparts who graduated from comprehensive or Pilot high schools. (p. 9)

These two studies further illustrated the gap that existed between the curricular standards for high school graduation and what was expected of students who enrolled in college—and therefore the role of academic preparation in college student success.

Adelman (1999) underscored the importance of academic preparedness and identified three factors that contributed most to degree attainment. First, academic intensity and quality of secondary school curriculum were more important than socioeconomic status or pre-college academic measures such as GPA, class rank, or test scores. Second, those who completed higher levels of math courses were more likely to attain a degree, and finally, those who required developmental reading courses were less likely to attain a degree than those who took other developmental courses. In summary, the quality of the curriculum is what enables a student to bridge from an inadequate educational experience in high school to difficult college-level work (Long & Bettinger, 2005).

However, colleges are still not effectively addressing the needs of underprepared students by creating this curriculum bridge (Tinto, 1998). The majority of institutions are not structured to address academic underpreparedness effectively because the academic skills of underprepared students are not easily improved using traditional college instruction (Malnarich, 2003; Smith, et

al., 2004). Given the role of quality curriculum in increasing student's academic skills, it is not surprising that attention has turned to curricular learning communities. The increasing need for developmental education, particularly in community colleges, along with the search for the most effective delivery method, has led those in the developmental education field to focus on curricular learning communities.

### **Historical Overview of Learning Communities**

Over the past decade, learning communities have attracted increasing attention. Their history, however, can be traced back to 1927 when the Meiklejohn Experimental College was created at the University of Wisconsin (Brown, 1981; Cronon & Jenkins, 1994; Powell, 1981; Smith, 2001, 2003). The emergent role of the research university concerned Alexander Meiklejohn, who thought that the organization and values associated with these institutions contradicted the primary objective of higher education: to prepare students for democratic citizenship. The curriculum was becoming increasingly fragmented into small and unrelated units and academic departments were becoming more specialized. As a result, the relationships between and among students and faculty were changing and the fragmented curriculum made it hard to study across disciplines (Smith, et al., 2004). The Experimental College experience led Meiklejohn and his colleagues to conclude that community was critical and that students and faculty both needed to engage in collaborative relationships to foster learning. Although the Experimental College was only in existence for five years, closing in 1932, it provided important lessons in curriculum and pedagogy that would later be integrated into other programs.

Many of the programs that emerged in the 1960s and 1970s were the result of the foundation Meiklejohn established. During the 1960s, enrollment in higher education almost doubled and the community college system was created (Smith, 2001; Smith, et al., 2004). The

expansion of access to higher education resulted in the development of many innovative colleges, both private and public, that challenged traditional curriculum and pedagogy, including Evergreen State College, University of California-Santa Cruz, Hampshire College, University of Wisconsin-Green Bay, and Empire State College. These new colleges were relatively insular, struggled to maintain an identity, and were preoccupied with surviving in their formative years (Smith, et al., 2004). In the 1970s, two very visible programs emerged in New York: federated learning communities at SUNY-Stony Brook and learning clusters at LaGuardia Community College. These two institutions demonstrated how learning communities, in their various forms, could be implemented in different institutional contexts (Smith, et al., 2004).

The growing movement of learning communities lacked a centralized organization to educate and support such innovative programs. As a result, when Patrick Hill became the provost of Evergreen State College in 1983 he facilitated a national movement and in 1985 the Washington Center for Undergraduate Education was founded at Evergreen State (Smith, 2001; Smith, et al., 2004). This center continues to provide leadership in the area of learning communities and serves as a centralized information organization; it has led to a significant increase in the amount of information disseminated. More specifically, the center has assisted colleges and universities across the country in learning about the various learning community models that can be adapted locally (Smith, 2001).

### **Learning Community Models**

Learning communities have evolved significantly since the Experimental College in 1927 and considerable amounts of research have been conducted on them. As a result, a widely shared definition of learning communities has emerged. Smith, et al. (2004) described learning communities as:



A variety of curricular approaches that intentionally link or cluster two or more courses, often around an interdisciplinary theme or problem, and enroll a common cohort of students. This represents an intentional restructuring of students' time, credit, and learning experiences to build community, enhance learning, and foster connections among students, faculty, and disciplines. At their best, learning communities practice pedagogies of active engagement and reflection. (p. 67)

There are several models of learning communities, which can be adapted to fit within an institutional context. It should be noted that learning community models have changed considerably over the past decade. However, what is common amongst all of models is that they are relevant to some of the concepts associated with Tinto's (1975, 1987, 1993) interactionalist model of student departure—directly addressing the formal and informal academic and social systems and the need for student's academic and social experiences to be integrated.

Gablenick, MacGregor, Matthews, and Smith (1990) described five models: linked courses, learning clusters, freshmen interest groups, federated learning communities, and coordinated studies programs. Smith (1991) described four models: linked courses, clusters, freshmen interest groups, and coordinated studies. Lenning and Ebbers (1999) described another four: curricular learning communities, classroom learning communities, residential learning communities, and student-type learning communities. Finally, the four described by Shapiro and Levine (1999) were paired or clustered courses, cohorts in large courses or first-year interest groups, team-taught courses, and residence-based programs.

Smith, et al. (1997, 2004) described three basic models which could be applied to a variety of contexts (e.g., residential or non-residential) and differed according to the extent to which faculty collaborate and to which the student cohort made up the entire class (Goodsell-Love & Tokuno, 1999). These three basic models were: learning communities within courses that are not modified, learning communities of linked or clustered classes, and team-taught learning communities (Smith, et al., 1997, 2004).

Learning communities within courses that are not modified are the simplest structure; they involve two or more pre-existing courses that are taught autonomously by the instructor and no changes to the curriculum are made (Smith, et al., 1997, 2004). In this model, a small cohort of students enroll in the same courses together, but they do not comprise all of the students in the courses. Therefore, each course contains students from the learning community and from outside of it. The faculty members teaching these courses do not change their curriculum, syllabi, or teaching methods, nor do they collaborate on course content. One of the most critical components of this model is the separate course designed specifically and only for the learning community cohort. It is in this seminar that intellectual connections are made across the content of the other courses and community building occurs. Two of the most common forms of this learning community model are the freshmen interest group and the integrative seminar learning community (Smith, et al., 2004).

Learning communities of linked or clustered classes involve the intentional linking of two or more courses (Smith, et al., 1997, 2004), and this is the type of learning community under investigation in this study. A cohort of students enroll in the same linked courses and usually those courses consist only of learning community students. As a result, students make strong social and academic connections and an intellectual community often forms—and a great deal of

community building occurs within the classroom (Goodsell-Love & Tokuno, 1999). The instructors for the linked courses collaborate with each other to ensure that cross-discipline connections are made; this results in an interdisciplinary approach to teaching. In this learning community model, two classes are referred to as linked/paired classes, and if three or more classes are offered as a learning community package, they are referred to as a cluster.

The structure of team-taught learning communities involves bringing together two or more courses in which faculty members collaborate to develop a shared syllabus around themes or projects (Smith, et al., 2004). Most often, a cohort of students all enroll in the same courses, which are open only to those in the learning community. As in the linked or clustered class models, the classroom is where social and academic connections are made between students. This particular model departs from the other models because of the way in which faculty collaborate with each other and the teaching strategies utilized in the courses. This learning community model, more than the others, significantly challenges traditional curriculum and teaching methods. These integrated courses across disciplines are truly interdisciplinary approaches in which students do not necessarily experience distinct courses, but rather approach an issue or theme (e.g., global citizenship, environmental problems, etc.) from multiple perspectives. In this model, both faculty and students become engaged learners, whereas the other models focus more on the classroom being a relatively passive experience for students, where students are not engaged with each other or the faculty (Goodsell-Love & Tokuno, 1999; Smith, et al., 2004).

It is important to note the significant variability in learning community designs. These three models provide basic learning community structures, but many of these models have been adapted to meet institution-specific needs. Smith, et al. (2004) describe six variations and

elaborations on learning community models: living-learning communities, additional co-curricular elements, curricular cohort programs, sequential course learning communities, multiple learning community structures on a single campus, and fixed-content and variable-content learning communities. The need for these variations underscores the context-specific nature of learning communities designed to meet institutional objectives, including student retention, student engagement, student learning, and developmental education.

### **Learning Communities and Collaborative Learning**

Learning communities are intentionally created to foster collaborative learning. Smith and MacGregor (1992) described collaborative learning, commonly referred to as active learning, as “the umbrella term for a variety of educational approaches involving joint intellectual effort by students, or students and teachers together” (p. 10). Collaborative learning is more than cooperative learning. As described by Gamson (1994), “collaborative learning is always cooperative, but takes students one step further, to a point where they must confront the issue of power and authority implicit in any form of learning but usually ignored” (p. 8). It should be noted that a variety of learning activities can be described as collaborative but the majority focus on the students’ exploration, reflection, and application of course material, not simply an instructor’s presentation or explanation of it. Several assumptions underlie collaborative learning as an effective teaching strategy: learning is an active and constructive process, learning depends on contexts, learners are diverse, learning is inherently social, and learning has affective and subjective dimensions (Smith & MacGregor, 1992). Some of the more common collaborative teaching strategies employed are problem-centered instruction, writing groups, peer teaching, discussion groups and seminars, and learning communities (Smith & MacGregor, 1992).

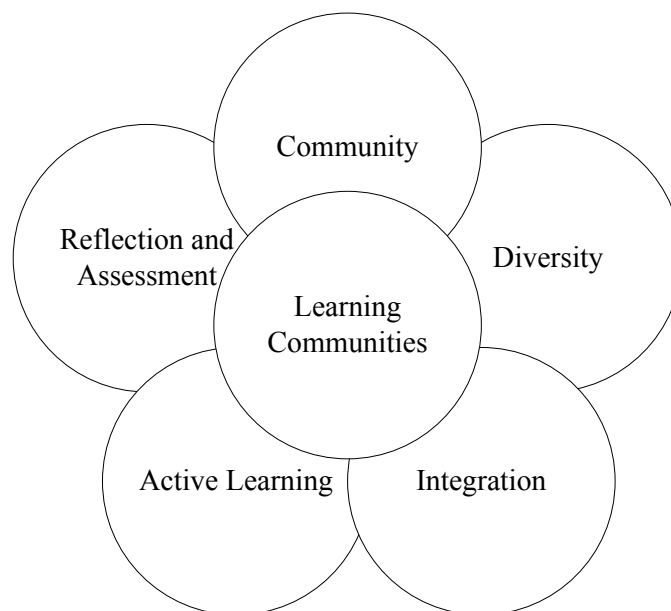
Many studies, including those by Astin (1997), have examined the role of co-curricular involvement in integrating students into the social and academic aspects of college life. However, the majority of today's college students attend part-time and are commuters, so their involvement is often limited to the classroom. As a result, the classroom serves as the focus for involving them in the development of an intellectual community that can facilitate their academic and social integration into the college. This challenges the traditional classroom experience where instructors are viewed as the sources and disseminators of knowledge and the students as passive recipients of their instruction (Gardiner, 1998). Barr and Tagg (1995) argued for a new paradigm in undergraduate education, from teaching-centered to learning-centered. This paradigm shift, which they said can occur through the use of learning communities, challenged institutional structures, curriculum, pedagogy, and the roles of students and faculty.

Learning communities, which focus on the use of collaborative teaching methods, can shift the way students construct knowledge and can assist in their social and academic integration (Cross, 1998; Tinto, 1993). Taking related courses provides an opportunity to understand that knowledge is shared (Tinto, 1997). It is not simply the existence of those related courses, but the promotion of collaborative learning that leads to the development of peer study and work groups. The result is a shift in the way students construct knowledge. As students study and often work together on group projects, this experience with their peers allows them to construct knowledge together, which leads to a sense of shared knowing.

Learning communities also shift the way knowledge is constructed through a shift in responsibility (Tinto, 1997). Rather than being responsible only for their own academic performance, they have a responsibility to the peers in their work and study groups. Therefore, the responsibility is shared not simply between instructors and individual students but also

between students. This also shifts the way students see instructors: instead of being the source of knowledge, they become facilitators of the learning process. The ongoing shared responsibility of peers and their academic-related interaction often leads to the forging of meaningful and fulfilling relationships, indeed a sense of community (Tinto, 1997). As a result, an intentional integration occurs between the academic and social communities. This is further underscored by Smith, et al. (2004) who identified five complementary and interrelated core practices of learning communities: community, diversity, integration, active learning, and reflection/assessment (p. 97) (see Figure 2.3).

Figure 2.3. Smith's, et al. (2004) Core Practices in Learning Communities



The use of collaborative teaching strategies within a learning community context has a track record of success in enhancing educational outcomes (Cabrera, Colbeck, & Terenzini, 2001; Cabrera, et al., 2002; Cabrera & La Nasa, 2002; Luvas-Briggs, 1984; MacGregor, 1991; Tinto, 1997; Tinto & Goodsell-Love, 1993; Tinto, Goodsell-Love, & Russo, 1994; Tinto & Russo, 1994; Wilcox, del Mars, Stewart, Johnson, & Ghery, 1997; Witmer, 1991). In a

longitudinal panel study, Tinto (1997) found that the coordinated studies program at Seattle Central Community College was meeting the college's intended outcomes in terms of engagement and retention. He described several findings, including participation in a collaborative or shared learning group enabled students to develop a network of support and students are influenced by participating in a setting where learning comes from multiple perspectives beyond that of one instructor. Also, student perceptions of intellectual gain and of grade point average were greater in the learning community setting than in a traditional setting, and it was possible to facilitate student involvement and achievement in settings where involvement was not easily attained, such as community colleges. This was a landmark study of learning communities: a longitudinal panel study of an institution where it was challenging to build community through social and academic integration, but the college overcame these challenges, reshaping the classroom experience by using collaborative learning strategies.

### **Learning Communities, Student Engagement, and Student Persistence**

For most colleges and universities with open enrollment, student attrition is a significant concern. Notably, the highest attrition rates occur after the first year of enrollment. For example, it is widely understood that over 50% of all dropouts from four-year institutions leave before the start of the second year (Tinto, 2000). Moreover, 51% of students entering higher education begin by enrolling in community colleges, where the attrition rate is higher than in four-year institutions (Fogarty, et al., 2003). Community colleges, which disproportionately enroll students who have been educationally underserved and therefore at risk of dropping out, have an additional challenge: student engagement. First-generation students and low-SES students are less likely to be engaged in social and academic experiences that foster student retention, including interacting with other students and faculty, studying in groups, participating

in co-curricular activities, and using student support services (Astin, 1997; Cabrera, Nora, & Castaneda, 1992; Lohfink & Paulsen, 2005; Nunez, et al., 1998; Pascarella, et al., 2003; Pike & Kuh, 2005; Richardson & Skinner, 1992). The lower levels of engagement among underserved populations and the high attrition rates at community colleges have led multiple researchers to study programs intended to foster student engagement and increase student persistence.

Learning communities have been proven to be an effective means of retaining college students (Luvas-Briggs, 1984; MacGregor, 1991; Pike, Schroeder, & Barry, 1997; Tinto, 1986, 1993, 1997, 2002, 2004). In his research, Tinto has attributed learning community effectiveness to a variety of factors, including issues related to: 1) separation, transition, and incorporation (Tinto, 1986); 2) academic and social integration (Tinto, 1993); and 3) the construction of knowledge (Tinto, 1997). Learning communities address all of these factors by transforming the classroom experience, and in turn promote student persistence (Tinto, 2002). As Bailey et al. (2004) suggested, the classroom can be, and should be, designed to promote meaningful interaction between students and faculty by using collaborative learning strategies. This concept was underscored by Keup (2005) who suggested that the classroom may be a primary, or only, place of engagement given the many forces that draw students away from co-curricular involvement.

An assessment of learning communities by the National Learning Communities Dissemination Project, which involved 19 institutions, including seven community colleges, provided insight on the effectiveness of learning communities (MacGregor, 1999). Those students who participated in learning communities had equal or higher grades than those in stand-alone courses. Equally important, students who participated in learning communities at community colleges had significantly higher retention rates than those students who did not



participate in a learning community (Ducher, Mino, & Sing, 1999; Jackson-Evans & Van Middlesworth, 1999; Mott, Bums, Chapman, Phillips, & Staub, 1999; Rings, Shovers, Skinner, & Siefer, 1999).

### **Learning Communities and Developmental Education**

Across the United States, colleges and universities continue to be challenged in serving the increasing number of students with poor academic skills, commonly referred to as academically underprepared students. Although the 1960s and 1970s saw increased access to higher education, the process of preparing these students for a college education has not kept pace with their access (Smith, et al., 2004). Cross (1971) expressed frustration with the elitist positions of colleges and universities that were not meeting the needs of underprepared students, who were enrolling in increasing numbers in institutions of higher education: she believed that community colleges would evolve into the primary place to educate these new students because traditional programs could not meet their learning needs.

In a keynote address given at the Conference on Replacing Remediation in Higher Education, Tinto (1998) described traditional “remedial” education as “efforts which have typically served to isolate, and in some cases, marginalize those students in standalone courses for which no college credit can be earned” (p. 1). Tinto (1998) argued that learning communities should be adapted to meet the needs of students who require developmental education, an idea also supported by many other scholars (Bloom & Sommo, 2005; Gablenick, et al., 1990; Levin & Calcagno, 2007; Malnarich, 2003; Smith, et al., 2004). Within the past fifteen years, several studies have found that curricular learning communities for academically underprepared students can effectively increase educational outcomes and student persistence (Bloom & Sommo, 2005;

MacGregor, 1991; Tinto, 1997; Tinto & Goodsell-Love, 1993; Tinto, et al., 1994; Tinto & Russo, 1994; Wilcox, et al., 1997; Witmer, 1991).

A recent qualitative study by Engstrom (2008) indicated that curricular learning communities, which linked basic skills courses to college-level courses, could foster student success for academically underprepared students. She interviewed 182 students enrolled at Cerritos College, DeAnza College, and California State University-East Bay. Many of those students were interviewed multiple times about their experiences at their respective institution. Students enrolled in the learning community program reported learning better in their learning community courses and four themes emerged from this study:

1. Active learning pedagogies: The learning community structure and faculty's teaching practices facilitated students in getting to know each other and the faculty member (p. 9).
2. Faculty collaboration and an integrated curriculum: The learning community faculty collaborated to design a curriculum that complemented the content between the courses and the faculty-coordinated class activities and assignments (p. 12).
3. Development of college learning strategies: The learning community faculty facilitated students' process of forming study groups and also encouraged students to access tutoring and academic support services (p. 15).
4. Student validation: The learning community faculty intentionally validated students; this was one of their day-to-day teaching practices (p. 16).

This study illustrated the important role that faculty can play in creating a class experience that fosters student engagement for underserved students who are most at risk of not persisting. These faculty members designed a classroom experience that provided students with the opportunity to integrate, both socially and academically, into the classroom community.

A study by Weissman, Butcher, Schneider, Teres, Collado, and Greenberg (2011) indicated that while basic skills math curricular learning communities students were passing developmental math at higher rates than students not in learning communities, there was relatively little long-term impact on persistence. More specifically, Weismann, et al. (2011) studied students in developmental math learning communities at Queensborough Community College and Houston Community College. There were a total of 2,307 participants—1,034 students at Queensborough and 1,273 students at Houston—who entered the study between 2007 and 2009. At Queensborough, developmental math courses were linked to college-level courses and at Houston, developmental math courses were linked to a student success course. While the researchers found that learning community participants passed their developmental math course at higher rates than their counterparts at both colleges, they also found that neither college's learning community program had an impact on persistence, suggesting that these learning communities were not meeting one of their intended outcomes—to increase student persistence rates.

Although the studies described above indicated that curricular learning communities for academically underprepared students *may* hold promise for helping to foster student success, a gap in the research literature remains. Current studies have focused primarily on a specific institution, or two, to measure program effectiveness. In addition, there have been no multi-institution quantitative studies that have measured student engagement and student persistence for academically underprepared students enrolled in basic skills curricular learning communities at community colleges. With more than 50% of college-going students in the United States beginning their higher education careers in community colleges and the increasing need for developmental education, there continues to be a need for further research on curricular learning

communities as an effective program to address the academic preparation, student engagement, and persistence problems (Smith, et al., 2004).

### Chapter 3: Methods

This chapter reviews the research questions and hypotheses examined in this study. Elements of the study design are discussed, including dataset, program selection, instrumentation, data collection, sample, and data variables. The data analysis procedures are also discussed in this chapter.

#### Research Questions and Hypotheses

This study was an analysis of multi-institutional and longitudinal data collected to study the impact of curricular learning communities on student persistence at postsecondary institutions in which students were academically underprepared and predominantly low-income. While the initial study included data from both two- and four-year institutions, only the community college data were used since the nature of this study is focused on two-year institutions. This study, which began in Fall 2003, was funded by the Lumina Foundation and the William and Flora Hewlett Foundation and served as the quantitative analysis for the Pathways to Pathways to Student Success initiative, under the direction of Vincent Tinto and Cathy Engstrom. Quantitative data analysis methods were used, including descriptive and multivariate analysis, to answer the following research questions and corresponding hypotheses:

1. Does participation in a basic skills curricular learning community, when compared to those not participating in a learning community, contribute significantly to the persistence of academically underprepared community college students from year one to year two?  
*Hypothesis.* Participation in a basics skills curricular learning community will contribute significantly to the persistence of academically underprepared community college students from year one to year two.

2. Do dimensions of engagement (preparation, engagement with instructors, engagement with classmates, feedback, academic encouragement and support, and personal encouragement and support) contribute significantly to the persistence of academically underprepared community college students from academic year one to year two?

*Hypothesis.* Engagement will contribute significantly to the persistence of academically underprepared community college students from academic year one to year two.

### **Study Design and Conceptual Framework**

Using a multi-institution longitudinal panel design, this study used quantitative measures to determine if curricular learning community participation and student's engagement in educationally purposeful activities (preparation, engagement with instructors, engagement with classmates, feedback, academic encouragement and support, and personal encouragement and support) contributed to persistence for academically underprepared community college students from year one to year two. This study was guided by Tinto (1975, 1987, 1993) who developed a longitudinal model of student departure. Tinto asserted that an individual's decision to leave an institution was the result of a longitudinal process consisting of interactions between the individual with given attributes and dispositions and members of the academic and social systems of the institution (Tinto, 1993). Further, Tinto argued that student's intentions and commitments were modified as a result of their experiences with the social and academic systems, and the more integrated these experiences, the more likely it would reinforce their persistence by strengthening their intentions and commitments related to the goal of completing college. Tinto argued that with sufficient social and academic integration, students would persist. However, even with sufficient integration, external commitments or changing goals/commitments could result in a student deciding to depart an institution.

Learning communities, through the use of collaborative teaching methods, can help facilitate social and academic integration (Tinto, 1993). The promotion of collaborative learning can foster peer study and work groups and engagement with faculty. Learning communities may also facilitate a shift in the way in which knowledge is constructed by shifting responsibility (Tinto, 1997). Rather than students being responsible only for their own academic performance, they have a responsibility to their peers. The ongoing shared responsibility of peers and their interaction can lead to the development of meaningful relationships (Tinto, 1997). As a result, an intentional integration can occur between the academic and social communities.

### **Dataset**

The Pathways to Student Success dataset was a multi-institution sample that included both self-reported data, collected by a survey instrument, and enrollment data collected by the researchers with assistance from the National Student Clearinghouse. The purpose of the study was to determine if participation in a basic skills curricular learning community and student engagement significantly contributed to student persistence from year one to year two for academically underprepared community college students.

### **Program Selection**

Three criteria were used to select the institutions, and in turn the respective basic skills curricular learning community programs, that participated in the Pathways to Student Success study (Engstrom & Tinto, 2007):

1. The institutions had curricular learning communities for some duration, and institutional data supported the claim that the communities were effective for underprepared students.
2. The curricular learning community programs represented the variations in organizations and structures being employed to meet the needs of underprepared students.

3. The institutions served students whom the research literature indicates are at risk for not attaining a degree/certificate, including underprepared, first-generation, minority, and non-traditional students.

Applications to participate in the study were solicited through the use of email listservs, websites, announcements at conferences, and nominations from the study's advisory board (see Appendix A for list of advisory board members). As part of the application process, institutions submitted institutional data about the basic skills curricular learning community program, the students the program served, and evidence that the program was effective in meeting institutional goals. In turn, the advisory board reviewed applications using the program selection criteria. The advisory board selected 13 two-year institutions and six four-year institutions to participate in the study (see Table 3.1 for names of participating institutions). All of the selected institutions had curricular learning communities that linked a basics skills course to at least one other course. At each institution, a contact person was identified to help manage the administration of the survey and collection of data.



Table 3.1

*Institutions Participating in Pathways to Student Success*

---

Two-Year Institutions

---

Community College of Baltimore County  
Camden Community College  
Cerritos Community College  
DeAnza Community College  
Grossmont Community College  
Holyoke Community College  
LaGuardia Community College  
San Jose City College  
Sandhills Community College  
Santa Fe Community College  
Seattle Central Community College  
Shoreline Community College  
Spokane Falls Community College

---

Four-Year Institutions

---

California State University - East Bay (Hayward)  
California State University - Los Angeles  
Temple University  
Tennessee State University  
Texas State University at San Marcos  
University of Texas - El Paso

---

**Instrumentation**

**Design.** A modified version of the Community College Survey of Student Engagement (CCSSE), titled the Pathways to Student Success Survey, was used for the Pathways to Student Success study (see Appendix B for complete instrument). The CCSSE was modeled on the National Survey of Student Engagement (NSSE) and questions in the two instruments overlapped by approximately 70% (Marti, 2010). The CCSSE was selected because it is widely used to measure student behaviors that are highly correlated with desirable educational outcomes

and because it is reliable and valid. The CCSSE asks students to provide three sets of information: 1) the frequency at which they, and the institution, engage in many activities which represent sound educational practice, 2) an estimation of their educational and personal growth, and 3) background information.

For the Pathways study, the CCSSE instrument was modified slightly to garner additional information related to expected outcomes of learning communities such as collaborative learning pedagogies. More specifically, some of the questions used to measure engagement with instructors (ENGIN) and feedback (FEED) were replicated, with “instructor” being replaced with “classmates” to measure engagement with classmates (ENGCLM). In addition, two measures of institutional encouragement were added to measure encouragement to attend class and to know classmates on a personal level. Table 3.4 summarizes the single-item measures associated with the conceptual factors used in this study and denotes those that were modifications to the CCSSE. The modified instrument was pilot tested at a community college and revised using feedback from an advisory board.

**Reliability and validity.** Two key studies have been conducted on the CCSSE: *Exploring the Relationship between Student Engagement and Student Outcomes in Community Colleges: Report on Validation Research* (McClenney & Marti, 2006) and *Dimensions of Student Engagement in American Community Colleges: Using the Community College Student Report in Research and Practice* (Marti, 2010). Both support the CCSSE as a reliable and valid instrument. An evaluation of Cronbach’s alpha values demonstrated there was typically strong consistency in the underlying constructs being measured in a factor. Test-retest reliability was also evaluated and indicated a high degree of consistency between first and second survey administrations. Table 3.2 summarizes the reliability findings.

Table 3.2

*CCSSE Reliability Measures*

Latent Construct	Alpha	Test-Retest <i>r</i>
Model of Effective Education Practices (MEEP)		
Active and Collaborative Learning	.66	.73
Student Effort	.56	.74
Academic Challenge	.80	.77
Student-Faculty Interaction	.67	.73
Support for Learners	.76	.73
Model of Best Fit (MBF)		
Faculty Interactions	.73	.72
Class Assignments	.65	.68
Exposure to Diversity	.73	.70
Collaborative Learning	.60	.67
Information Technology	.59	.69
Mental Activities	.83	.73
School Opinions	.78	.73
Student Services	.65	.61
Academic Preparation	.56	.76

Note: The MBF resulted from an analysis of the underlying dimensions of student engagement that provide the best statistical fit to the data. The MEEP reduced the number of constructs in the MBF to a number that could be used conveniently as indicators of institutional effectiveness.

Several validity analyses have also been conducted on the CCSSE to determine if it consistently demonstrated a strong relationship between a variety of outcomes (e.g., GPA, course enrollment, persistence, etc.) and the outcomes. Most relevant to this study was the validity of the association between engagement factors and persistence from year one to year two. Using three separate sets of outcome data, McClenney and Marti (2006) and McClenney (2007) were able to demonstrate that across all three data sets, there is substantial support for the link between CCSSE measures and external outcomes, including persistence and degree/certificate attainment.

Finally, Kuh (2003a) extensively analyzed a study on the psychometric properties of engagement; he found that, in general, the psychometric properties of the NSSE, which was used as a foundation to construct the CCSSE, were very good since the vast majority of the items were equal to or surpassed recommended measurement levels.

### **Data Collection**

**Questionnaire.** Students in basic skills curricular learning community classrooms and comparison group (non-learning community) classrooms were selected to be surveyed. In order to identify the comparison group classrooms, each institutional contact person was asked to identify courses that were similar to the content of the basic skills curricular learning community courses and also had students with similar attributes and academic preparation. All of the students in the selected basic skills curricular learning community courses and comparison group courses were selected to be surveyed. In Fall 2003 the Pathways to Student Success Survey was administered to the students in these courses. The students completed the questionnaire cover page containing their name, social security number, date of birth and address; they turned it in separately from the remainder of the questionnaire. This was done to better ensure student confidentiality when the questionnaires were being collected by the course instructor. Since each page of the questionnaire contained a survey number, the cover page could be linked with the remainder of the questionnaire after the data had been entered. The cover page data were entered manually and the remainder of the questionnaire was scanned. In turn, these two tables of data were linked to create one data set containing the cover page and remaining questionnaire data.

**Persistence data.** The Enrollment Search services of the National Student Clearinghouse (NSC) were utilized to collect Fall 2004 enrollment data on the students who had completed the Pathways to Student Success Survey in Fall 2003. The NSC provides student degree and

enrollment services and it was specifically identified to provide enrollment data for this study since, unlike state databases, it can identify enrollment at any college in the country. The files obtained from the NSC contained row data which was difficult to utilize for analysis; therefore the row data were converted into column data. The data file obtained from NSC was then linked to the questionnaire data table. The result was one table containing both the Fall 2003 questionnaire and the Fall 2004 enrollment data for each student in the study.

### **Sample**

Given the research questions, all of the two-year institutions that participated in the Pathways to Student Success study were selected for this study; Table 3.3 presents the response rate for the study by group (learning community and comparison) and the 13 community colleges that participated in this study. All of the participants in the study were enrolled in at least one basic skills course, and in the case of learning community participants, the basic skills course was linked to another course. Of the 6,272 students in the sample, a total of 3,773 completed the survey instrument, resulting in an overall response rate of 60%. The response rate for the learning community group ranged from 43% ( $n=89$ ) at Holyoke Community College to 92% ( $n=9385$ ) at Grossmont Community College and the total response rate for the learning community group was 63% ( $n=1,570$ ). The response rate for the comparison group ranged from 43% ( $n=54$ ) at Camden Community College to 80% ( $n=169$ ) at Santa Fe Community College and the total response rate for the comparison group was 58% ( $n=2,203$ ). The response rate across groups was 60% ( $n=3,773$ )

Survey Respondents by College and Group

	Learning Community Group				Comparison Group				Total		
	Sample	Respondents	Response Rate (%)	Response Rate (%)	Sample	Respondents	Response Rate (%)	Response Rate (%)	Sample Total	Respondent Total	Response Rate (%)
	68	44	65	43	127	54	43	50	195	98	50
	291	130	45	66	352	233	66	56	643	363	56
more County	221	116	52	56	297	166	56	54	518	282	54
	202	126	62	52	289	149	52	56	491	275	56
lege	417	385	92	54	731	395	54	68	1148	780	68
lege	208	89	43	65	385	252	65	58	593	341	58
lege	313	199	64	68	281	190	68	65	594	389	65
	76	48	63	53	207	109	53	55	283	157	55
lege	93	52	56	58	263	153	58	58	356	205	58
lege	107	75	70	80	212	169	80	76	319	244	76
College	136	97	71	55	223	123	55	61	359	220	61
lege	224	118	53	55	154	84	55	53	378	202	53
College	133	91	68	48	262	126	48	55	395	217	55
	2,489	1,570	63	58	3,783	2,203	58	60	6,272	3,773	60

Below are institutional profiles for those institutions whose student questionnaire and enrollment data were used in this study (Tinto & Engstrom, 2010). These profiles illustrate the diverse students attending the institutions and the relatively low retention rates of students at these institutions, demonstrating the need to identify effective intervention strategies that foster student retention.

**Community College of Baltimore County.** This college is a three-campus system located in Catonsville, Dundalk, and Essex, Maryland with nearly 20,000 students in several associate's degree and certificate programs. Of the students enrolled at the college, 46% receive some form of financial aid and 39% of the students identify as being a student of color, 56% identify as White, and the race of the other 5% is unknown (StateUniversity.com, 2010c). The retention rate for full-time students is 59%; for part-time students it is 44% (StateUniversity.com, 2010c).

**Camden Community College.** This college is located at three different campuses in New Jersey, and enrolls 14,000 students in several associate's degree and certificate programs. Of the students enrolled at the college, 46% receive some form of financial aid and 36% identify as being a student of color, 61% identify as White, and the race of the other 3% is unknown (StateUniversity.com, 2010a). The retention rate for full-time students is 61%; for part-time students it is 37% (StateUniversity.com, 2010a).

**Cerritos Community College.** This college is located in Norwalk, in Los Angeles County, California, and enrolls 24,500 students in several associate's degree, certificate, and transfer programs. Of the students enrolled at the college, 55% receive some form of financial aid and 73% of the students identify as being a student of color, 14% identify as White, and the

race of the other 13% is unknown (StateUniversity.com, 2010b). The retention rate for full-time students is 67%; for part-time students it is 46% (StateUniversity.com, 2010b).

**DeAnza Community College.** This college, located in Cupertino, California, enrolls 25,000 students in several associate's degree and certificate programs. Of the students enrolled at the college, 26% receive some form of financial aid and 64% of the students identify as being a student of color, 25% identify as White, and the race of the other 11% is unknown (StateUniversity.com, 2010d). The retention rate for full-time students is 63%; for part-time students it is 54% (StateUniversity.com, 2010d).

**Grossmont Community College.** This college, located in El Cajon, California, enrolls 16,000 students in several associate's degree and certificate programs. Of the students enrolled at the college, 44% receive some form of financial aid and 40% of the students identify as being a student of color, 51% identify as White, and the race of the other 9% is unknown (StateUniversity.com, 2010e). The retention rate for full-time students is 62%; for part-time students it is 42% (StateUniversity.com, 2010e).

**Holyoke Community College.** This college, located in Holyoke, Massachusetts, enrolls 5,700 students in several associate's degree and certificate programs. Of the students enrolled at the college, 50% receive some form of financial aid and 23% of the students identify as being a student of color, 75% identify as White, and the race of the other 2% is unknown (StateUniversity.com, 2010f). The retention rate for full-time students is 59%; for part-time students it is 45% (StateUniversity.com, 2010f).

**LaGuardia Community College.** This college, associated with the City University of New York (CUNY) system, is located in Queens, New York. It enrolls approximately 12,000 students in several associate's degree and certificate programs. Of the students enrolled at the



college, 68% receive some form of financial aid and 86% of the students identify as being a student of color and 14% identify as White (StateUniversity.com, 2010g). The retention rate for full-time students is 62%; for part-time students it is 43% (StateUniversity.com, 2010g).

**San Jose City College.** This college, located in the San Francisco Bay Area, enrolls 10,000 students in several associate's degree, certificate, and transfer programs. Of the students enrolled at the college, 68% receive some form of financial aid and 70% of the students identify as being a student of color, 20% identify as White, and the race of the other 10% is unknown (StateUniversity.com, 2010h). The retention rate for full-time students is 60%; for part-time students it is 41% (StateUniversity.com, 2010h).

**Sandhills Community College.** This college, located in Pinehurst, North Carolina, enrolls over 4,000 students in several associate's degree, certificate, and transfer programs. Of the students enrolled at the college, 67% receive some form of financial aid and 32% of the students identify as being a student of color, 65% identify as White, and the race of the other 3% is unknown (StateUniversity.com, 2010i). The retention rate for full-time students is 67%; for part-time students it is 70% (StateUniversity.com, 2010i).

**Santa Fe Community College.** This college, located in Gainesville, Florida, enrolls 17,000 students in several associate's degree and certificate programs. Of the students enrolled at the college, 70% receive some form of financial aid and 27% of the students identify as being a student of color, 71% identify as White, and the race of the other 2% is unknown (StateUniversity.com, 2010j). The retention rate for full-time students is 68%; for part-time students it is 46% (StateUniversity.com, 2010j).

**Seattle Central Community College.** This college, located in Seattle, Washington, enrolls 10,000 students in several associate's degree and certificate programs. Of the students

enrolled at the college, 29% receive some form of financial aid and 35% of the students identify as being a student of color, 51% identify as White, and the race of the other 14% is unknown (StateUniversity.com, 2010k). The retention rate for full-time students is 64%; for part-time students it is 38% (StateUniversity.com, 2010k).

**Shoreline Community College.** This college, located in Shoreline, Washington, enrolls 14,000 students in associate's degree, certificate, and transfer programs. Of the students enrolled at the college, 29% receive some form of financial aid and 31% of the students identify as being a student of color, 53% identify as White, and the race of the other 16% is unknown (StateUniversity.com, 2010l). The retention rate for full-time students is 60%; for part-time students it is 55% (StateUniversity.com, 2010l).

**Spokane Falls Community College.** This college, located in Spokane, Washington, enrolls 10,000 students in associate's, certificate, and transfer programs. Of the students enrolled at the college, 39% receive some form of financial aid and 12% of the students identify as being a student of color, 76% identify as White, and the race of the other 12% is unknown (StateUniversity.com, 2010m). The retention rate for full-time students is 54%; for part-time students it is 38% (StateUniversity.com, 2010m).

### **Sociodemographic Variables**

This study utilized eight sociodemographic variables which have been selected because the research literature indicates that they influence student persistence (Chen & Carroll, 2005; Choy, 2001; Horn, Nunez, & Bobbitt, 2000; Kelly, 2005; Lohfink & Paulsen, 2005; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Pascarella, Wolniak, Pierson, & Terenzini, 2003; Pike & Kuh, 2005; Peter, et al., 2005; Ramani, Gilbertson, Fox, & Provasnik, 2007; Warburton, Bugarin, Nunez, & Carroll, 2001). The list below describes these variables.

- Highest Credential Earned. What is the highest credential you have earned? (None; High school diploma; GED; Vocational/technical certificate; Associate’s degree; Bachelor’s degree; Master’s/doctoral/professional degree; Other)
- Father’s Education. What is the highest level of education obtained by your father? (None; High school diploma or GED; Vocational or trade school; Some college/did not complete a degree; Associate's degree; Bachelor's degree; Master's/doctorate/professional degree; Unknown)
- Mother’s Education. What is the highest level of education obtained by your mother? (None; High school diploma or GED; Vocational or trade school; Some college/did not complete a degree; Associate's degree; Bachelor's degree; Master's/doctorate/professional degree; Unknown)
- Age. What is your age group? (18 to 25 years old; 26 to 60 plus years old)
- Gender. What is your gender? (Male; Female)
- English First Language. Is English your native (first) language? (Yes; No)
- U.S. Citizen. What is your citizenship status? (U.S. Citizen; International)
- Ethnicity. What is your racial/ethnic identification? (American Indian or other Native American; Asian, Asian American, Pacific Islander, or Native Hawaiian; Black or African American; White, Non-Hispanic; Hispanic, Latino, Spanish; Other)

### **Identifying Composite Measures**

**Extraction and rotation.** Three exploratory principal component analyses (PCA) with oblique Promax rotation were completed to reduce a large number of variables, single-item measures from the survey instrument, to composite measures (factors). Three analyses were completed since three different scales were used for the single-item measures. Oblique rotations

allow factors to correlate, whereas orthogonal rotations produce uncorrelated factors (Costello & Osborne, 2005). In social science research, it is generally understood that there will be some correlation between factors since it is unlikely that human behavior will be partitioned into units that function independent of one another (Costello & Osborne, 2005).

**Missing values.** Although some single-item measures had complete data, some had missing values. These missing values were scattered throughout cases and variables. For those variables missing values, all had less than 3.5% missing data. The mean substitution procedure was used to obtain a complete dataset for use in the principal component analyses. The reason this procedure was selected is that it is a conservative approach since the mean for the distribution does not change and the researcher does not have to make assumptions about missing values (Tabachnick & Fidell, 2007). However, a consequence of this procedure is that the variance for a variable is reduced, which results in reducing the correlation a variable has with other variables (Tabachnick & Fidell, 2007). The overall loss of variance with the procedure depends on the amount of missing data and since the percentage of missing cases for each of the variables included in the principal component analysis is relatively low, this procedure is an acceptable approach for managing missing data (Tabachnick & Fidell, 2007).

**Selecting single-item measures.** Single-item measures were initially selected for the PCA based on the intended outcomes of learning community participation. After the PCA was completed the communality each item was reviewed to determine if it should remain in the analysis. The communality for a variable (single-item measure) is the variance accounted for by the factor (Tabachnick & Fidell, 2007). Velicer and Fava (1998) consider item communalities high if they are .8 or above; however, for social science research, more common magnitudes are low to moderate communalities of .40 to .70 (Costello & Osborne, 2005). In this study, all items

with a communality of .4 or higher remained in the analysis. In addition, to the Kaiser-Meyer-Olkin's (KMO) measure of sampling adequacy was used to determine if a principal component analysis of the variables was appropriate. The KMO measure of sampling adequacy is an index for comparing the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. Large values for the KMO measure indicate that a principal component analysis of the variables is appropriate, and Tabachnick and Fidell (2007) recommend completing the analysis with KMO measures of .6 and greater.

**Selecting factors.** To identify the number of factors to be used, a Scree Plot was performed and upon examination of a graph of the eigenvalues, a break point was identified whereby the curve flattened (Costello & Osborne, 2005). The number of datapoints above the break point identified the number of factors retained for further analysis. In addition, only factors with eigenvalues greater than 1 were selected since the factor must extract at least as much as the equivalent of one original variable. This criterion was proposed by Kaiser (1960), and is probably the one most widely used for selecting factors (Tabachnick & Fidell, 2007).

**Conceptual factors.** Composite measures (factors) were utilized to measure the intended outcomes of learning communities and their impact on student persistence. These factors included: preparation, engagement with instructors, engagement with classmates, feedback, academic encouragement and support, and personal encouragement and support. Table 3.4 contains a summary of factors and the associated single-item measures. These conceptual factors, and the associated single-item measures, generally reflect the five benchmarks of effective educational practice contained in the CCSSE (2009a) which have acceptable reliability. That is, for CCSSE each factor has an alpha higher than .4 (Marti, 2010): active and collaborative learning ( $\alpha=.67$ ), student effort ( $\alpha=.56$ ), academic challenge ( $\alpha=.80$ ), student-

faculty interaction ( $\alpha=.72$ ), and support for learners ( $\alpha=.72$ ). Marti (2010) used grade point average (GPA) as an external measure of student performance to test the validity of the factors and found that four of the five factors demonstrated a positive relationship with GPA. Support for learners was the one factor that did not have a positive relationship with GPA. However, Marti (2010) explained that this was likely because the “support for learners” factor was comprised of single-item measures designed to reflect institutional practices that are important to student retention, but that are not expected to be correlated with GPA.

The conceptual factors used in this study were slightly modified from CCSSE’s benchmarks to facilitate two procedures. First, this modification accounts for the additional single-item measures on the Pathways to Student Success survey instrument which are not included in the CCSSE survey instrument. Second, it made it possible to analyze, in more detail, the intended outcomes of learning communities, such as engagement with classmates and perceived institutional encouragement and support.

Table 3.4

*Conceptual Factors to Measure Preparation, Engagement with Instructors, Engagement with Classmates, Feedback, Academic Encouragement and Support, and Personal Encouragement and Support*

Conceptual Factors and Associated Survey Items	Factor Code
<p><i>Preparation</i></p> <p>Preparing for class with your classmates (studying, reading, writing, rehearsing or other activities related to your program)</p> <p>Preparing for class with the assistance of a tutor</p> <p>Preparing for class by yourself (studying, reading, writing, doing homework, rehearsing or other activities related to your program)</p>	PREP

<i>Engagement with Instructors</i>	ENGIN
Discussed grades or assignments with an instructor	
Talked about academic or career plans with an instructor	
Used email to communicate with an instructor	
Discussed ideas from your readings or classes with instructors outside class	
<i>Engagement with Classmates</i>	ENGCLM
Worked with classmates outside of class to prepare class assignments	
Tutored or taught other students (paid or voluntary)	
Discussed ideas from your readings or classes with classmates outside class*	
<i>Feedback</i>	FEED
Received feedback (written or oral) from your instructors on your performance	
Received feedback (written or oral) from your classmates on your performance*	
<i>Academic Encouragement and Support</i>	AES
Encouraging you to attend class*	
Encouraging you to spend significant amounts of time studying	
Providing the support you need to help you succeed at this college	
Encouraging you to make use of academic support services	
<i>Personal Encouragement and Support</i>	PES
Providing the support you need to thrive socially	
Helping you cope with your non-academic responsibilities (work, family, etc.)	
Encouraging you to make contact with student of different economic, social, racial, or ethnic backgrounds	
Encouraging you to know your classmates on a personal level (name, background, interests, etc.)*	

---

Note. (\*) represents a single-item measure modified from the CCSSE.

To determine the score for the factor for each respondent, their selections for each single-item measure were added; the sum was then divided by the total number of single-item measures used to create the factor. The PREP factor was comprised of three single-item questions using the following scale: none, 1 to 5 hours per week, 6 to 10 hours per week, 11 to 20 hours per week, 21 to 30 hours per week, and more than 30 hours per week. ENGIN, ENGCLM, and

FEED factors were comprised of multiple single-item measures using the following scale: never, rarely, sometimes, often, and very often. Finally, the AES and PES factors were comprised of four single-item measures each and using the following scale: very little, some, quite a bit, very much.

### **Persistence, Group, and Institutional Variables**

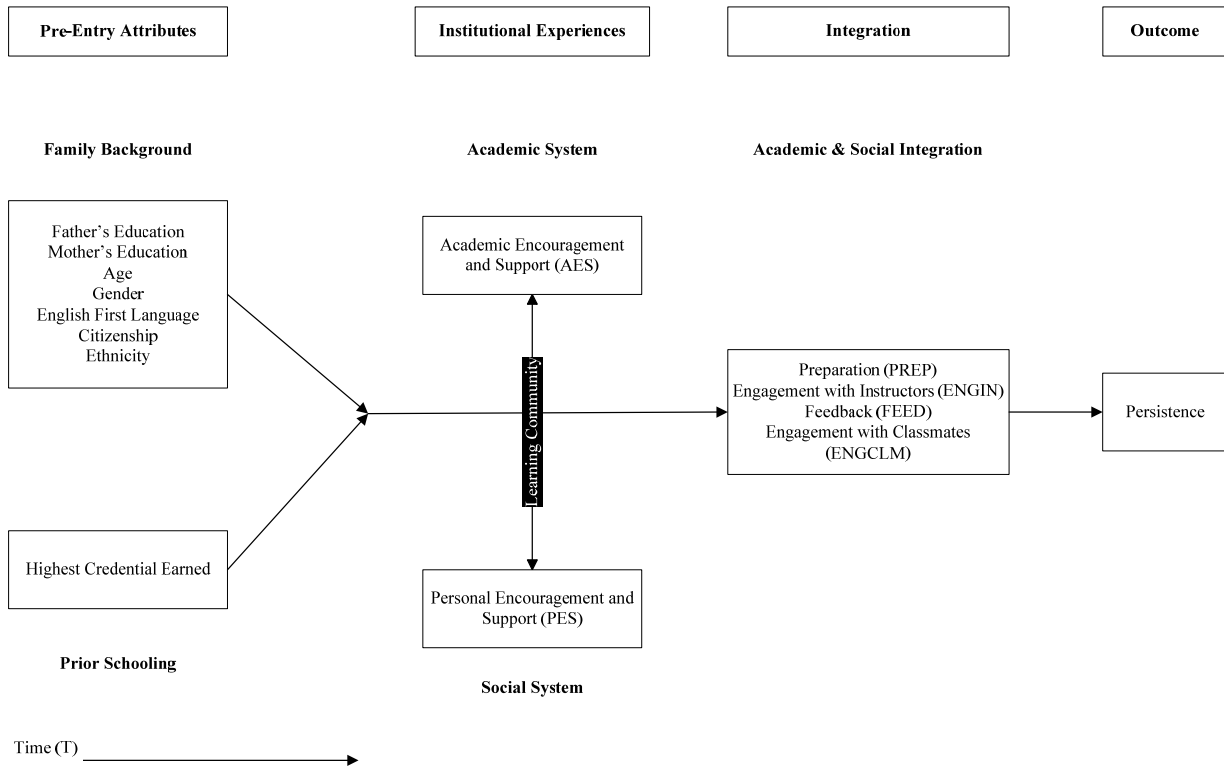
Three more key variables relevant to the proposed study were the dependent variable, persistence, defined as enrollment in Fall 2004, group identification (learning community group or comparison group), and the organization of the academic calendar at the institution—semester or quarter system. Being on the semester or quarter systems reflects how long students had been in their courses before they completed the questionnaire at the end of October 2003. Institutions on the quarter system typically begin around the third week of September whereas institutions on the semester system typically begin around the end of August, reflecting approximately a three-week differential. As a result, participants at institutions on a quarter system completed the questionnaire approximately six weeks into the quarter and participants at institutions on a semester system completed the questionnaire approximately nine weeks into the semester.

### **Summary of Variables and Relationship to Theoretical Model**

Figure 3.1 provides a summary of the variables in this study and their alignment with Tinto's (1993) longitudinal model of student departure (see Figure 3.1). More specifically, this figure summarizes the pre-entry variables (e.g., parent's highest level of education, age, gender, highest credential earned, etc.), institutional experience variables (e.g., learning community participation and perceptions of academic and personal encouragement and support), integration variables (e.g., preparation, engagement with instructors, feedback, and engagement with classmates), and finally, the outcome variable (e.g., persistence).



Figure 3.1. Summary of Variables in Study and Relationship to Tinto's (1993) Conceptual Model



## Data Analysis

Data analysis was performed to describe the overall data set and included five separate analyses:

1. Descriptive and bivariate analysis to compare sociodemographic variables of the learning community and comparison groups
2. Descriptive and bivariate analysis to compare persistence rates of the learning community and comparison groups
3. Factor analysis to develop factors
4. Descriptive and nonparametric analysis to compare the single-item measures and factors for the learning community and comparison groups
5. Multivariate analysis to answer the research questions

### **Descriptive and bivariate analysis for sociodemographic variables and persistence.**

Descriptive statistics were used to describe the sociodemographic characteristics of the study participants in the learning community and comparison groups. Since students self-selected to participate in the learning community, it was also important to identify any significant differences between the two groups. Chi-square analyses were performed to identify any significant differences between the sociodemographic characteristics of the learning community group and comparison group students who participated in the study. After the analysis of sociodemographic characteristics, persistence and attrition rates were summarized using descriptive statistics and then a chi-square analysis was performed to identify any significant differences between the persistence and attrition rates of the learning community and comparison groups.

**Factor analysis.** A factor analysis was utilized to explore the relationships between single-item measures within conceptual factors. Phohlmann (2004) states that factor analysis is often used in educational research to “a) analyze patterns in a correlation matrix, b) reduce large numbers of variables to a smaller number of composites or factors, c) simplify analyses of highly correlated independent variables, d) explore observed data for the presence of theoretical variables, and e) test hypotheses about theoretical variables” (p. 14). Factor analysis made it possible to explore the relationship between single-item measures, with the intended outcome of being able to identify correlations between those single-item measures used to measure the underlying expected outcomes of learning communities: preparation for class (PREP), engagement with instructors (ENGIN), engagement with classmates (ENGCLM), receiving feedback (FEED), academic encouragement and support (AES), and personal encouragement and support (PES)

In order to accommodate the differences in scales used on the single-item measures, three principal component factor analyses with oblique Promax rotation were performed. The first factor analysis was performed on three single-item measures for preparation (PREP), the second was performed on nine single-item measures for engagement with instructors (ENGIN), engagement with classmates (ENGCLM), and feedback (FEED). The third, and final, factor analysis was performed on 8 single-item measures for academic encouragement and support (AES) and personal encouragement and support (PES). Oblique rotation was selected since the factors themselves may be correlated and oblique rotation typically provides a more simple structure (Taq, 1997). Two criteria were used to ensure that meaningful factors underlying the items remained in the analysis: a) single-item measures with communalities greater than .40, and b) factors that were meaningful and therefore could be interpreted (Liang & Sedlacek, 2003; Phohlmann, 2004).

#### **Descriptive and nonparametric analysis for single-item measures and factors.**

Descriptive statistics were used to provide a summary of the scores for the single-item measures that comprised the factors and independent samples t-tests were performed to identify any statistically significant differences for the mean scores on the single-item measures between learning community and comparison groups. After the analyses on the single-item measures, independent samples t-tests were performed to identify any statistically significant differences for mean factor scores between the learning community and comparison groups. This methodology is recommended by Huck (2000) when comparing only the means between two independent sample groups. Finally, the effect size, Cohen's *d*, was identified for each of the single-item measures and factors to illuminate the magnitude of any significant differences between the learning community and comparison groups. While the independent samples t-test

was used to determine significant differences between the two groups, Cohen's  $d$  was used to determine whether these significant differences were realistically, not just statistically, meaningful (Tabachnick & Fidell, 2007). According to Cohen (1992), the effect size can be small, medium, and large and effect sizes, Cohen's  $d$ , are respectively .20, .50, or .80.

**Multivariate analysis.** A logistic regression was utilized to answer the research questions. Given that the dependent variable was dichotomous (enrolled or not enrolled in Fall 2004), logistic regression was best suited to help identify whether participation in a learning community and factors indicating engagement (PREP, ENGIN, ENGCLM, AES, PES) significantly contributed to persistence from year one to year two, while also controlling for a number of other variables (e.g. sociodemographic characteristics). The use of logistic regression to study enrollment and persistence has a demonstrated history of effectiveness (Cabrera, Stampen, & Hansen, 1990; Cofer & Somers, 2001; Dey, 1991; Gross, Hossler, & Ziskin, 2007; Kuh, et al., 2008; Manski & Wise, 1983; St. John, 1990a, 1990b; St. John, Kirshstein, & Noell, 1991; St. John & Noell, 1989; Stampen & Cabrera, 1986, 1988). Cabrera (1994) offers two relevant assumptions related to the use of logistic regression:

1. Each of the potential values of the outcome variable  $Y$  (0 or 1) has a corresponding expected probability that varies as a function of the values that the independent variable(s) can take for each subject. Statistically, this statement can be expressed as follows:

$$E[Y_{ith} = 1/X = x] = P(Y_{ith} = 1)$$

where  $P(Y_{ith} = 1)$  represents the probability of observing the condition of success (i.e. persisting) for the  $i$ th subject given a particular value of  $X$  (p. 227).

2. As far as the nature of the relationship between a binary outcome and a given independent variable is concerned, the logistic regression model presumes that this association can be accounted for by a logistic function. In the case of one independent variable, the logistic function takes the following form:

$$L = \ln \frac{P(Y)}{1 - P(Y)} = B_0 + B_1 X_1$$

Where  $L$  is called the logit or the natural logarithm of the odds ratio,  $B_0$  and  $B_1$  refer to familiar intercept and beta weight and  $P(Y)$  stands for the expected probability of  $Y$  across different values of  $X$  (pp. 227-228).

Since probabilities are the focus of logistic regression, the equation can also be expressed in this way:

$$P(Y) = \frac{\exp(B_0 + B_1 X_1)}{1 + \exp(B_0 + B_1 X_1)}$$

Several logistic regression models were created to determine if learning community participation and engagement significantly and positively contribute to student persistence; see Table 3.5 for a summary of the models. The variables were loaded into the logistic regression models in alignment with Tinto's (1993) longitudinal model of student departure (see Figure 3.1). The first model focused on the effect of sociodemographic variables on persistence, the second model focused on the effects of sociodemographic and institutional academic calendar structure (semester or quarter system) variables on persistence, the third model focused on the effects of sociodemographic, institutional academic calendar, and learning community participation (group) variables on persistence. Lastly, model four contained all of the variables:

sociodemographic, institutional academic calendar structure, group, and engagement. These models were derived from previous studies related to student persistence, whereby variables were blocked together in an easily understood and conceptual manner (Cabrera, 1994).

Table 3.5

*Logistic Regression Models to Determine the Impact of Learning Community Participation and Engagement on Persistence from Year One to Year Two*

Model 1	Model 2	Model 3	Model 4
Highest Credential Earned	Highest Credential Earned	Highest Credential Earned	Highest Credential Earned
Father's Education	Father's Education	Father's Education	Father's Education
Mother's Education	Mother's Education	Mother's Education	Mother's Education
Age	Age	Age	Age
Gender	Gender	Gender	Gender
English First Language	English First Language	English First Language	English First Language
Citizenship	Citizenship	Citizenship	Citizenship
Ethnicity	Ethnicity	Ethnicity	Ethnicity
	Semester or Quarter System	Semester or Quarter System	Semester or Quarter System
		Group	Group
			PREP
			ENGIN
			ENGCLM
			FEED
			AES
			PES

*Note.* The outcome (dependent) variable is persistence (enrollment in fall 2004).





## **Limitations**

This study faced several limitations. First, it did not take into account pre-college enrollment academic performance data (to measure academic underpreparedness) or financial aid data since those data were not available. Previous studies have demonstrated that academic preparedness and receiving financial support significantly influence student persistence. More specifically, students who are identified as academically underprepared are less likely to persist (Adelman, 1999, 2006; Grubb, 2001; St. John, Musoba, & Chung, 2004; Warburton, et al., 2001) and students who receive financial support and have lower debt loads are more likely to persist (Cofer & Somers, 2001; Gross, et al., 2007; 1996; St. John, Hu, & Tuttle, 2000; St. John, Hu, & Weber, 2000; St. John, et al., 2004). Since these data were not collected in this study, they were not introduced in the logistic regression model to determine their impact on student persistence. Given that participants in both groups were in basic skills courses, it is evident that students in both groups were academically underprepared, but the magnitude of their underpreparedness is unknown, and is likely highly varied. Similarly, since there was not a consistent placement test used amongst institutions to measure academic preparation, there were likely differences between institutions in how they identified students who needed to take basic skills courses. Thus, academic preparation data were not controlled for in the data analysis for this study.

Second, a random sampling technique was not used to identify curricular learning community programs or participants in the Pathways to Student Success initiative; instead, a purposive sampling technique was utilized (Huck, 2000). Courses at each institution were specifically identified and selected and the respective students enrolled in the course served as participants in the study. Therefore, it cannot be claimed that the participants in this study were representative of the students at each institution selected to be a part of the study. However, the

course and program selection process was intentional and was evaluated using criteria established by an advisory board.

Third, the data used in this study, collected through the Pathways to Student Success Survey, was gathered through self-reports. Although this technique is commonly used in social science research, participants' responses to survey questions may be influenced simply by the knowledge that they are being evaluated (Bellini & Rumrill, 1999). However, it is generally understood that self-reports are likely to be valid as long as five conditions are met: the respondents actually know the information requested; the survey questions are phrased clearly; the questions refer to recent events or activities; the respondents see merit to the questions; and the respondents believe that responding to the questions does not jeopardize their privacy (Bradburn & Sudman, 1988; Converse & Presser, 1986; DeNisi & Shaw, 1977; Hansford & Hattie, 1982; Laing, Sayer, & Noble, 1989; Lowman & Williams, 1987; Pace, 1985; Pike, 1995). Like the CCSSE instrument (Kuh, 2003a; Marti, 2010), the Pathways to Student Success instrument was designed to meet these five conditions.

## Chapter 4: Results

The purpose of this study was to use multi-institutional and longitudinal data to examine the impact of curricular learning communities and dimensions of engagement on student persistence from year one to year two. More specifically, the study was designed to answer two research questions:

1. Does participation in a basic skills curricular learning community, when compared to those not participating in a learning community, contribute significantly to the persistence of academically underprepared community college students from year one to year two?
2. Do dimensions of engagement (preparation, engagement with instructors, engagement with classmates, feedback, academic encouragement and support, and personal encouragement and support) contribute significantly to the persistence of academically underprepared community college students from academic year one to year two?

Underpinning the design of the study was Tinto's longitudinal model of student departure which is an interactionist model (described in Chapter 2) whereby pre-entry attributes, goals/commitments, institutional experiences, and integration influence student persistence (Tinto, 1975, 1987, 1993). Descriptive and bivariate analyses were used to describe the learning community and comparison groups and examine significant differences between the two groups across sociodemographic variables as well as responses to the questionnaire and persistence. Principal component factor analysis, a multivariate technique, was completed to determine which single-item measures significantly correlated with each other and could be used to reduce a large number of single-item measures into conceptual factors used to describe engagement. Once the

factors and corresponding single-item measures were identified, bivariate analysis was completed on the single-item measures to identify significant differences between the learning community and comparison groups. Finally, logistic regression analysis was used to identify the sociodemographic variables, group association (learning community group versus comparison group), and engagement factors that contributed to student persistence from year one to year two. An alpha level of .05 was used for all statistical analysis to determine significance.

### **Demographic Characteristics**

The descriptive analysis revealed a diverse portrait of the participants in this study. Table 4.1 contains the complete findings from the descriptive analysis on sociodemographic variables between the learning community and comparison groups. Among the participants, 9% ( $n=341$ ) did not have a high school diploma or equivalent, 78% ( $n=2,937$ ) had a high school diploma, 6% ( $n=209$ ) had a GED, 3% ( $n=132$ ) had a vocational/technical certificate, and the remaining 4% ( $n=154$ ) had an associate's degree or higher. Participant's parental educational attainment was also varied. For the participants' father's highest educational level, 18% ( $n=518$ ) did not complete high school, 25% ( $n=726$ ) had a high school diploma or equivalent, 17% ( $n=509$ ) completed vocational/trade school or had completed some college, and 40% ( $n=1,176$ ) had completed a college degree. For the participants' mother's highest educational level, 18% ( $n=526$ ) did not complete high school, 27% ( $n=794$ ) had a high school diploma or equivalent, 19% ( $n=536$ ) completed vocational/trade school or had completed some college, and 35% ( $n=1,051$ ) had completed a college degree.

The majority of the participants were traditional age college students, with 84% ( $n=3,060$ ) of participants indicating they were between 18 and 25 years old. The remaining 16% ( $n=583$ ) of participants indicated they were non-traditional and between the ages of 26 and 60

plus years old. The majority of the participants, 62% ( $n=2,252$ ), indicated they were female and the remaining 38% ( $n=1,382$ ) indicated they were male. Sixty-six percent ( $n=2,508$ ) of participants indicated that English was their first language and 34% ( $n=1,265$ ) indicated it was not their first language. In describing their citizenship, 83% ( $n=3,030$ ) indicated they were U.S. citizens and the remaining 17% ( $n=599$ ) they were international. Finally, in terms of ethnicity for the participants, 1% ( $n=50$ ) identified as American Indian or other Native American, 15% ( $n=538$ ) identified as Asian, Asian American, Pacific Islander, or Native Hawaiian, 13% ( $n=457$ ) identified as Black or African American, 41% ( $n=1,499$ ) identified as White and Non-Hispanic, 23% ( $n=829$ ) identified as Hispanic, Latino, or Spanish, and the remaining 7% ( $n=252$ ) identified as Other. In sum, 52% ( $n=1,874$ ) of the participants identified as being students of color.

Table 4.1

*Summary of Learning Community Group and Comparison Group Characteristics*

Sociodemographic Variable	Learning Community Group (LCG)		Comparison Group (CG)		Total	
	<i>n</i>	% within LCG	<i>n</i>	% within CG	<i>n</i>	% of Total Respondents
<b>Highest Credential Earned</b>						
None	115	7	226	10	341	9
High School Diploma	1,266	81	1,671	76	2,937	78
GED	87	6	122	6	209	6
Vocational/Technical Certificate	48	3	84	4	132	3
Associate's/Bachelor's/Master's/Doctorate/Professional/Other	54	3	100	5	154	4
Total	1,570	100	2,203	100	3,773	100
<b>Father's Education</b>						
Not a High School Graduate	211	17	307	18	518	18
High School Diploma or GED	302	24	424	25	726	25
Vocational or Trade School	64	5	82	5	146	5
Some College, Did Not Complete a Degree	162	13	201	12	363	12
Associate's Degree	80	6	93	5	173	6
Bachelor's Degree	135	11	221	13	356	12
Master's/Doctorate/Professional Degree	113	9	156	9	269	9
Unknown	166	13	212	13	378	13
Total	1,233	100	1,696	100	2,929	100
<b>Mother's Education</b>						
Not a High School Graduate	222	18	304	18	526	18
High School Diploma or GED	331	27	463	28	794	27
Vocational or Trade School	56	5	80	5	136	5
Some College, Did Not Complete a Degree	183	15	217	13	400	14
Associate's Degree	106	9	139	8	245	8
Bachelor's Degree	122	10	199	12	321	11
Master's/Doctorate/Professional Degree	90	7	123	7	213	7
Unknown	122	10	150	9	272	9
Total	1,232	100	1,675	100	2,907	100
<b>Age</b>						
18 to 25 Years Old	1,320	86	1,740	82	3,060	84
26 to 60 Plus Years Old	212	14	371	18	583	16
Total	1,532	100	2,111	100	3,643	100
<b>Gender</b>						
Male	549	36	833	39	1,382	38
Female	974	64	1,278	61	2,252	62
Total	1,523	100	2,111	100	3,634	100
<b>English First Language</b>						
Yes	1,041	66	1,467	67	2,508	66
No	529	34	736	33	1,265	34
Total	1,570	100	2,203	100	3,773	100
<b>Citizenship</b>						
U.S. Citizen	1,269	83	1,761	84	3,030	83
International	258	17	341	16	599	17
Total	1,527	100	2,102	100	3,629	100
<b>Ethnicity</b>						
American Indian or other Native American	21	1	29	1	50	1
Asian, Asian American, Pacific Islander, or Native Hawaiian	237	16	301	14	538	15
Black or African American	203	13	254	12	457	13
White, Non-Hispanic	589	39	910	43	1,499	41
Hispanic, Latino, Spanish	366	24	463	22	829	23
Other	109	7	143	7	252	7
Total	1,525	100	2,100	100	3,625	100

Chi-square analysis was performed on all of the sociodemographic variables to examine if there were significantly more or less participants than expected between the learning community group and comparison group. Of all of the sociodemographic variables, highest credential earned (level of education), age, and gender were found to be significant difference were identified between the two groups (Table 4.2). The chi-square results indicated the following:

- The highest credential earned for participants was significant ( $X^2=15.641$  (4),  $p<.01$ ), with more participants than expected reporting “none” for the comparison group (10%,  $n=226$ ) than the learning community group (7%,  $n=115$ ) and fewer participants than expected reporting “High School Diploma” for the comparison group (76%,  $n=1,671$ ) than the learning community group (81%,  $n=1,226$ ).
- The age of participants was significant ( $X^2=3.220$  (1),  $p<.05$ ), with more than expected reporting being traditional age, 18 to 25 years old, for the learning community group (86%,  $n=1,320$ ) than the comparison group (82%,  $n=1,740$ ). There were more than expected non-traditional age participants, 26 to 60 plus years old, in the comparison group (18%,  $n=371$ ) than the learning community group (14%,  $n=212$ ).
- The gender of participants was significant ( $X^2=4.372$  (1),  $p<.05$ ) with more than expected reporting being male in the comparison group (39%,  $n=833$ ) than the learning community group (36%,  $n=549$ ). There were more than expected females in the learning community group (64%,  $n=974$ ) than the comparison group (61%,  $n=1,278$ ).

*Significant Differences by Group on Selected Demographic Characteristics*

	LCG		CG		Total		Chi-Square Results	
	<i>n</i>	% within LCG	<i>n</i>	% within CG	<i>n</i>	% of Total Respondents	<i>X</i> <sup>2</sup>	DF
Gender	115	7	226	10	341	9	15.641**	4
Age	1,266	81	1,671	76	2,937	78		
Education	87	6	122	6	209	6		
Occupation	48	3	84	4	132	3		
Marital Status	54	3	100	5	154	4		
Income	1,570	100	2,203	100	3,773	100		
Health Status	1,320	86	1,740	82	3,060	84	9.220**	1
Religious Preference	212	14	371	18	583	16		
Political Preference	1,532	100	2,111	100	3,643	100		
Number of Children	549	36	833	39	1,382	38	4.372*	1
Number of Siblings	974	64	1,278	61	2,252	62		
Number of Grandchildren	1,523	100	2,111	100	3,634	100		



## Persistence and Attrition Rates

Table 4.3 presents the persistence and attrition rates from year one (Fall 2003) to year two (Fall 2004) for learning community and comparison group participants. Chi-square analysis was performed to determine if there were significantly more or less participants than expected in each of the categories. The chi-square was significant ( $X^2=11.047$  (1),  $p<.001$ ) with more participants than expected in the learning community group persisting (63%,  $n=977$ ) than the comparison group (57%,  $n=1,252$ ). There were less than expected participants in the learning community group that did not persist (38%,  $n=593$ ) than the comparison group (43%,  $n=951$ ).

Table 4.3

### *Summary of Group Persistence and Attrition Rates and Chi-Square Results*

Group	Persisted		Did Not Persist	
	N	Percent	N	Percent
LCG	977	62	593	38
CG	1,252	57	951	43
Total	2,229	59	1,544	41

$X^2=11.047^{***}$ , DF=1

\*\*\* $p < .001$ .

**Results of principal component analysis.** Three single-item measures, using the following scale, were entered into the first analysis: 0=none, 1=1-5 hours, 2=6-10 hours, 3=11-20 hours, 4=21-30 hours, and 5=more than 30 hours. Results of the Scree Plot and Kaiser method used to estimate the number of factors indicated the presence of one factor, preparation (PREP) for class. Table 4.4 summarizes the mean, standard deviation, N, communality, and correlation for each single-item measure. The lowest single-item communality was .468 for “preparing for class with your classmates” and the highest was .653 for “preparing for class with

the assistance of a tutor.” The KMO measure for the model was .602. All single-item measures remained in the model, representing one factor.

*egs from Principal Component Analysis for Preparation (PREP)*

	<i>n</i>	M	SD	Comm.	Correlation with Factor with Promax Rotation
	3,773	.74	.829	.468	0.808
	3,773	.36	.731	.653	0.722
	3,773	1.91	1.095	.522	0.684

1=1-5 hours, 2=6-10 hours, 3=11-20 hours, 4=21-30 hours, and 5=more than 30 hours.

Next, nine single-item measures, using the following scale, were entered into the second analysis: 1=never, 2=rarely, 3=sometimes, 4=often, and 5=very often. Results of the Scree Plot and Kaiser method used to estimate the number of factors indicated the presence of three factors, engagement with instructor (ENGIN), engagement with classmates (ENGCLM), and feedback (FEED). Table 4.5 summarizes the mean, standard deviation, *n*, communality, and correlation for each single-item measure for the three factors. For ENGIN, the lowest single-item communality was .413 for “used email to communicate with and instructor” and the highest was .651 for “discussed grades or assignments with an instructor.” For ENGCLM, the lowest single-item communality was .541 for “tutored or taught other students (paid or unpaid)” and the highest was .646 for “worked with classmates outside of class to prepare for class assignments.” For FEED, the lowest single-item measure was .691 for “received feedback (written or oral) from your classmates on your performance” and the remaining single-item measure, “received feedback (written or oral) from your instructors on your performance,” had a communality of .754. The KMO measure for the model was .809. All single-item measures remained in the model, representing three factors.

Rotation Factor Loadings from Principal Component Analysis for Engagement with Instructor (ENGIN), Engagement with Classmates  
Feedback (FEED)

Item	n	M	SD	Comm.	Correlation with Factor with Promax Rotation
<i>Instructors (ENGIN)</i>					
...s or assignments with an instructor	3,773	3.17	1.148	0.651	0.808
...ademic or career plans with an instructor	3,773	2.52	1.238	0.598	0.744
...mmunicate with an instructor	3,773	2.33	1.317	0.413	0.668
...from your readings or classes with instructors outside class	3,773	2.05	1.159	0.559	0.599
<i>Classmates (ENGCLM)</i>					
...assmates outside of class to prepare class assignments	3,773	2.42	1.237	0.646	0.803
...at other students (paid or voluntary)	3,773	1.79	1.093	0.541	0.775
...from your readings or classes with classmates outside class	3,773	2.66	1.220	0.548	0.586
...ck (written or oral) from your instructors on your performance	3,773	3.53	1.223	0.754	0.894
...ck (written or oral) from your classmates on your performance	3,773	2.60	1.275	0.691	0.774

Item scale is 1=never, 2=rarely, 3=sometimes, 4=often, and 5=very often.

Finally, eight single-item measures, using the following scale, were entered into the third, and final, principal component analysis: 1=very little, 2=some, 3=quite a bit, and 4=very much.. Results of the Scree Plot and Kaiser method used to estimate the number of factors indicated the presence of two factors, academic encouragement and support (AES) and personal encouragement and support (PES). Table 4.6 summarizes the mean, standard deviation, N, communality, and correlation for each single-item measure for the three factors. For AES, the lowest single-item communality was .544 for “encouraging you to spend significant amounts of time studying” and the highest was .642 for “encouraging you to attend class.” For PES, the lowest single-item communality was .463 for “encouraging you to know your classmates on a person level” and the highest was .673 for “providing the support you need to thrive socially.” The KMO measure for the model was .862. All single-item measures remained in the model, representing two factors

*Factor Loadings from Principal Component Analysis for Academic Encouragement and Support (AES) and Personal Support (PES)*

	<i>n</i>	M	SD	Comm.	Correlation with Factor with Promax Rotation
<i>Academic Encouragement and Support (AES)</i>					
attend class	3,773	3.06	1.017	0.642	0.814
spend significant amounts of time studying	3,773	3.02	0.906	0.544	0.781
you need to help you succeed at this college	3,773	3.01	0.930	0.592	0.698
make use of academic support services	3,773	2.95	0.942	0.624	0.762
<i>Personal Support (PES)</i>					
you need to thrive socially	3,773	2.29	0.929	0.673	0.831
your non-academic responsibilities (work, family, etc.)	3,773	2.06	1.026	0.666	0.854
make contact with students of different economic, social, racial, or ethnic backgrounds	3,773	2.47	1.094	0.601	0.764
know your classmates on a personal level (name, background, interests, etc.)	3,773	2.48	1.065	0.463	0.600

scale is 1=very little, 2=some, 3=quite a bit, and 4=very much.

## Nonparametric Analysis for Engagement Single-Item Measures and Factors

**Single-item measures.** After the single-item measures used to comprise each factor were identified, nonparametric analysis, using independent sample t-tests, was conducted to determine any significant differences between the learning community and comparison groups for the single-item measures. Table 4.7 reports the mean,  $n$ , standard deviation, standard error mean, independent sample t-test results, and effect size, Cohen's  $d$ , results for the single-item measures which comprise the "preparation" (PREP) factor by group (learning community vs. comparison). For these single-item measures, the mean score represents the number of hours spent preparing, with higher scores representing more hours. For PREP, the only significant difference between the learning community group and comparison group was for "preparing for class with your classmates" ( $t(3,771)=-3.542$ ,  $p<.001$ ). The learning community group ( $M=.800$ ,  $SD=.836$ ) scored significantly higher than the comparison group ( $M=.703$ ,  $SD=.822$ ), indicating that the learning community participants reported spending significantly more time preparing for class with classmates than comparison group participants. However, Cohen's  $d$  was .117, representing a small effect size. There were no significant differences for "preparing for class with the assistance of a tutor" ( $t(3,771)=-1.349$ ) or "preparing for class by yourself" ( $t(3,771)=-1.402$ ).



*Single-Item Measures for PREP by Group*

Group	<i>n</i>	M	SD	SE Mean	<i>t</i>	DF	Cohen's <i>d</i>
LCG	1,570	0.800	0.836	0.021	-3.542***	3,771	0.117
CG	2,203	0.703	0.822	0.018			
LCG	1,570	0.383	0.728	0.018	-1.349	3,771	0.044
CG	2,203	0.351	0.733	0.016			
LCG	1,570	1.936	1.105	0.028	-1.402	3,771	0.046
CG	2,203	1.886	1.087	0.023			

5-10 hours, 3=11-20 hours, 4=21-30 hours, and 5=more than 30 hours.

Table 4.8 reports the mean,  $n$ , standard deviation, standard error mean, independent sample t-test results, and effect size, Cohen's  $d$ , results for the single-item measures which comprise the "engagement with instructors" (ENGIN), "engagement with classmates" (ENGCLM), and "feedback" (FEED) factors by group (learning community vs. comparison). For these single-item measures, the mean score represents how often the participants were involved in these activities, with higher scores representing more often. For ENGIN, all, except one, of the single-item measures were significantly different between the learning community group and comparison group: the learning community group ( $M=3.311$ ,  $SD=1.052$ ) scored significantly higher than the comparison group ( $M=3.139$ ,  $SD=1.100$ ) for "discussed grades or assignments with an instructor" ( $t(3,771)=-4.828$ ,  $p<.001$ ), the learning community group ( $M=2.655$ ,  $SD=1.193$ ) scored significantly higher than the comparison group ( $M=2.493$ ,  $SD=1.190$ ) for "talked about academic or career plans with an instructor" ( $t(3,771)=-4.129$ ,  $p<.001$ ), and the learning community group ( $M=2.163$ ,  $SD=1.127$ ) scored significantly higher than the comparison group ( $M=2.037$ ,  $SD=1.122$ ) for "discussed ideas from your readings or classes with an instructor outside of class" ( $t(3,771)=-3.402$ ,  $p<.001$ ). However, Cohen's  $d$  for these three single-item measures was .160, .136, and .112, representing a small effect size for all three measures. There was no significant difference for "used e-mail to communicate with your instructor" ( $t(3,771)=-.202$ ).

For ENGCLM, all of the single-item measures were significantly different between the learning community group and comparison group: the learning community group ( $M=2.515$ ,  $SD=1.208$ ) scored significantly higher than the comparison group ( $M=2.420$ ,  $SD=1.188$ ) for "worked with classmates outside of class to prepare for class assignments" ( $t(3,771)=-2.407$ ,  $p<.05$ ), the learning community group ( $M=1.834$ ,  $SD=1.098$ ) scored significantly higher than the

comparison group ( $M=1.759$ ,  $SD=1.075$ ) for “tutored or taught other students” ( $t(3,771)=-2.103$ ,  $p<.05$ ), and the learning community group ( $M=2.812$ ,  $SD=1.160$ ) scored significantly higher than the comparison group ( $M=2.626$ ,  $SD=1.172$ ) for “discussed ideas from your readings or classes with classmates outside of class” ( $t(3,771)=-4.823$ ,  $p<.01$ ). However, Cohen’s  $d$  for these three single-item measures was .079, .069, and .160, representing a small effect size for all three measures. Finally, for FEED, one of the single-item measures was significantly different between the learning community and comparison group: the learning community group ( $M=3.751$ ,  $SD=1.073$ ) scored significantly higher than the comparison group ( $M=3.513$ ,  $SD=1.115$ ) for “received feedback from your instructors on your performance” ( $t(3,771)=-6.571$ ,  $p<.001$ ). However, Cohen’s  $d$  for this single-item measure was .218, representing a small effect size. There was no significant difference for “received feedback from your classmates on your performance” ( $t(3,771)=-7.476$ ).

Multiple t-Test Results for Single-Item Measures for ENGIN, ENGCLM, and FEED by Group

Single Item Measures	Group	n	M	SD	SE Mean	t	DF	Cohen's d
ENGIN	LCG	1,570	3.311	1.052	0.027	-4.828***	3,771	0.160
	CG	2,203	3.139	1.100	0.023			
	LCG	1,570	2.655	1.193	0.030	-4.129***	3,771	0.136
	CG	2,203	2.493	1.190	0.025			
	LCG	1,570	2.358	1.296	0.033	-.202	3,771	0.006
	CG	2,203	2.350	1.296	0.028			
ENGCLM	LCG	1,570	2.163	1.127	0.028	-3.402***	3,771	0.112
	CG	2,203	2.037	1.122	0.024			
	LCG	1,570	2.515	1.208	0.030	-2.407*	3,771	0.079
	CG	2,203	2.420	1.188	0.025			
	LCG	1,570	1.834	1.098	0.028	-2.103*	3,771	0.069
	CG	2,203	1.759	1.075	0.023			
FEED	LCG	1,570	2.812	1.160	0.029	-4.823***	3,771	0.160
	CG	2,203	2.626	1.172	0.025			
	LCG	1,570	3.751	1.073	0.027	-6.571***	3,771	0.218
	CG	2,203	3.513	1.115	0.024			
	LCG	1,570	2.862	1.166	0.029	-7.476	3,771	0.247
	CG	2,203	2.573	1.175	0.025			

05. is 1=never, 2=rarely, 3=sometimes, 4=often, and 5=very often.



Table 4.9 reports the mean, *n*, standard deviation, standard error mean, independent sample t-test results, and effect size, Cohen's *d*, results for the single-item measures which comprise the "academic encouragement and support" (AES) and "personal encouragement and support" (PES). For these single-item measures, the mean score represents how much the institution emphasizes these activities, with higher scores representing more emphasis. For AES, all of the single-item measures were significantly different between the learning community group and comparison group: the learning community group (M=3.171, SD=.908) scored significantly higher than the comparison group (M=3.090, SD=.934) for "encouraging you to attend class" ( $t(3,771)=-2.678$ ,  $p<.01$ ), the learning community group (M=3.142, SD=.806) scored significantly higher than the comparison group (M=3.000, SD=.859) for "encouraging you to spend significant amounts of time studying" ( $t(3,771)=-5.149$ ,  $p<.001$ ), the learning community group (M=3.100, SD=.827) scored significantly higher than the comparison group (M=3.035, SD=.862) for "providing the support you need to help you succeed at this college" ( $t(3,771)=-2.325$ ,  $p<.05$ ), and the learning community group (M=3.018, SD=.916) scored significantly higher than the comparison group (M=3.895, SD=.957) for "encouraging you to make use of academic support services" ( $t(3,771)=-3.953$ ,  $p<.001$ ). However, Cohen's *d* for these four single-item measures was .088, .170, .077, and .131, representing a small effect size for all four measures.

For PES, all of the single-item measures were significantly different between the learning community group and comparison group: the learning community group (M=2.357, SD=.924) scored significantly higher than the comparison group (M=2.248, SD=.931) for "providing the support you need to thrive socially" ( $t(3,771)=-3.541$ ,  $p<.001$ ), the learning community group (M=2.152, SD=1.001) scored significantly higher than the comparison group (M=2.067,

SD=.960) for “helping you cope with your non-academic responsibilities” ( $t(3,771)=-2.634$ ,  $p<.01$ ), the learning community group ( $M=2.599$ ,  $SD=1.036$ ) scored significantly higher than the comparison group ( $M=2.453$ ,  $SD=1.044$ ) for “encouraging you to make contact with students of different economic, social, and racial or ethnic backgrounds” ( $t(3,771)=-4.250$ ,  $p<.001$ ), and the learning community group ( $M=2.718$ ,  $SD=1.002$ ) scored significantly higher than the comparison group ( $M=2.389$ ,  $SD=1.001$ ) for “encouraging you to know your classmates on a personal level” ( $t(3,771)=-9.964$ ,  $p<.001$ ). However, Cohen’s  $d$  for these four single-item measures was .118, .087, .140, .329, representing a small effect size for all four measures.

*t*-Test Results for Single-Item Measures for AES and PES by Group

Item Measures	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>SE Mean</i>	<i>t</i>	<i>DF</i>	Cohen's <i>d</i>
<i>Support (AES)</i>								
Amounts of time studying	LCG	1,570	3.171	0.908	0.023	-2.678**	3,771	0.088
	CG	2,203	3.090	0.934	0.020			
How much do you expect to help you succeed at this college	LCG	1,570	3.142	0.806	0.020	-5.149***	3,771	0.170
	CG	2,203	3.000	0.859	0.018			
How much do you expect to use academic support services	LCG	1,570	3.100	0.827	0.021	-2.325*	3,771	0.077
	CG	2,203	3.035	0.862	0.018			
How much do you expect to thrive socially	LCG	1,570	3.018	0.916	0.023	-3.953***	3,771	0.131
	CG	2,203	2.895	0.957	0.020			
<i>Personal (PES)</i>								
How much do you expect to have academic responsibilities (work, family, etc.)	LCG	1,570	2.357	0.924	0.023	-3.541***	3,771	0.118
	CG	2,203	2.248	0.931	0.020			
How much do you expect to have relationships with students of different economic, social, and racial or ethnic background	LCG	1,570	2.152	1.001	0.025	-2.634**	3,771	0.087
	CG	2,203	2.067	0.960	0.020			
How much do you expect to have relationships with classmates on a personal level (name, background, interests, etc.)	LCG	1,570	2.599	1.036	0.026	-4.250***	3,771	0.140
	CG	2,203	2.453	1.044	0.022			
How much do you expect to have relationships with classmates on a personal level (name, background, interests, etc.)	LCG	1,570	2.718	1.002	0.025	-9.964***	3,771	0.329
	CG	2,203	2.389	1.001	0.021			

1=very little, 2=some, 3=quite a bit, and 4=very much.



**Factors.** After nonparametric analysis was conducted on the single-item measures which comprised each of the factors, an independent samples t-test was conducted to determine any significant differences between the learning community and comparison groups for the six factors: preparation (PREP), engagement with instructors (ENGIN), engagement with classmates (ENGCLM), feedback (FEED), academic encouragement and support (AES), and personal encouragement and support (PES). For the factors, the higher the factor score, the more the engagement. Table 4.10 reports the *n*, mean factor score, standard deviation, standard error, independent sample t-test results, and effect size, Cohen's *d*, results for the factors. The mean factor scores for the learning community group were significantly higher than the mean factor score for the comparison group for all six factors: PREP ( $t(3,771)=-2.920$ ,  $p<.01$ ), ENGIN ( $t(3,771)=-4.431$ ,  $p<.001$ ), ENGCLM ( $t(3,771)=-3.718$ ,  $p<.001$ ), FEED ( $t(3,771)=-8.760$ ,  $p<.001$ ), AES ( $t(3,771)=-5.991$ ,  $p<.001$ ), and PES ( $t(3,771)=-4.934$ ,  $p<.001$ ). However, Cohen's *d* for these six factors was .096, .147, .123, .289, .195, .164, representing a small effect size for all of the factors.

Table 4.10

Summary of Independent Samples *t*-Test Results for Factor by Group

Factor and Group	<i>n</i>	Mean Factor Score	SD	SE	<i>t</i>	DF	Cohen's <i>d</i>
Preparation (PREP)					-2.920**	3,771	0.096
Learning Community Group	1,570	.056	1.018	0.026			
Comparison Group	2,203	-.040	.985	0.021			
Engagement with Instructors (ENGIN)					-4.431***	3,771	0.147
Learning Community Group	1,570	.085	.986	0.025			
Comparison Group	2,203	-.061	1.005	0.021			
Engagement with Classmates (ENGCLM)					-3.718***	3,771	0.123
Learning Community Group	1,570	.072	1.009	0.025			
Comparison Group	2,203	-.051	.991	0.021			
Feedback (FEED)					-8.760***	3,771	0.289
Learning Community Group	1,570	.167	.988	0.025			
Comparison Group	2,203	-.119	.992	0.021			
Academic Encouragement and Support (AES)					-5.911***	3,771	0.195
Learning Community Group	1,570	.113	.996	0.025			
Comparison Group	2,203	-.081	.995	0.021			
Personal Encouragement and Support (PES)					-4.934***	3,771	0.164
Learning Community Group	1,570	.095	.957	0.024			
Comparison Group	2,203	-.068	1.025	0.022			

\*\**p* < .01. \*\*\**p* < .001.

## Predicting Student Persistence

A logistic regression analysis was conducted to determine the effect of demographic variables, learning community participation, and engagement on student persistence. The independent variables were entered into five models to determine how each set of variables contributed to student persistence. The overall results of the analysis indicated that for 63.6% of the participants the dependent variable, persistence, was predicted correctly and the model was significant ( $X^2=177.828$  (38),  $p<.001$ ). Results for each model of the logistic regression analysis are presented in table 4.11.

The first model contained students' demographic characteristics. Among these variables, five were significant. Having a high school diploma was a statistically significant and positive contributor to persistence,  $B=.585$ ,  $p<.01$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.795, indicating that those with a high school diploma were 1.795 times more likely to persist than students without a

formal education. Having a vocational or technical certificate was a statistically significant and positive contributor to persistence,  $B=.601$ ,  $p<.05$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.824, indicating that those with a vocational or technical certificate were 1.824 times more likely to persist than students without a formal education. Being 26 years of age or older was a statistically significant and negative contributor to persistence,  $B=-.358$ ,  $p<.01$ , with an odds ratio,  $\text{Exp}(B)$ , of .699, indicating that students between 26 and 60 plus years old were .699 times less likely to persist than those students between 18 and 25 years old. Being male was a statistically significant and positive contributor to persistence,  $B=.173$ ,  $p<.05$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.189, indicating that male were 1.189 times more likely to persist than female students. Finally, being a U.S. citizen was a statistically significant and positive contributor to persistence,  $B=.717$ ,  $p<.001$ , with an odds ratio,  $\text{Exp}(B)$ , of 2.048, indicating that students who were U.S. citizens were 2.048 times more likely to persist than students who were not U.S. citizens.

For the first model, the other variables, including father's and mother's level of education, English as first language, and ethnicity, were not statistically significant contributors to persistence. For 63.2% of the participants the dependent variable, persistence, was predicted correctly and the model was significant ( $X^2=135.549$  (30),  $p<.001$ ). More specifically, 24.8% ( $n=260$ ) of participants who did not persist were correctly predicted by the model and 88.1% ( $n=1,420$ ) of participants who did persist were correctly predicted by the model.

The second model contained students' demographic characteristics and the institutional academic calendar structure (semester or quarter system) variable. Among these variables, seven were significant. The addition of this institutional variable resulted in two more variables becoming significant contributors to persistence, father's highest education level being a

bachelor's degree and being Black or African-American, and the other variables also remained as significant contributors to persistence.

For the second model, having a high school diploma was a statistically significant and positive contributor to persistence,  $B=.584$ ,  $p<.01$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.793, indicating that students with a high school diploma were 1.793 times more likely to persist than students without a formal education. Having a vocational or technical certificate was a statistically significant and positive contributor to persistence,  $B=.591$ ,  $p<.05$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.806, indicating that students with a vocational or technical certificate were 1.806 times more likely to persist than students without a formal education. Having a father's highest level of education be a bachelor's degree was a statistically significant and positive contributor to persistence,  $B=.373$ ,  $p<.05$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.453, indicating that students whose father's highest level of education was a bachelor's degree were 1.453 times more likely to persist than students whose father's did not have this as their highest level of education. Being 26 years of age or older was a statistically significant and negative contributor to persistence,  $B=-.365$ ,  $p<.01$ , with an odds ratio,  $\text{Exp}(B)$ , of .694, indicating that those students between 26 and 60 plus years old were .694 times less likely to persist than those students between 18 and 25 years old. Being male was a statistically significant and positive contributor to persistence,  $B=.168$ ,  $p<.05$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.183, indicating that male were 1.183 times more likely to persist than female students. Being a U.S. citizen was a statistically significant and positive contributor to persistence,  $B=.734$ ,  $p<.001$ , with an odds ratio,  $\text{Exp}(B)$ , of 2.043, indicating that those students who were U.S. citizens were 2.043 times more likely to persist than students who were not U.S. citizens. Finally, being Black or African American was a statistically significant and negative contributor to persistence,  $B=-.289$ ,  $p<.05$ , with an odds

ratio,  $\text{Exp}(B)$ , of .749, indicating that those students who were Black or African American were .749 times less likely to persist than students who were not Black or African American.

For the second model, the other variables, including mother's level of education, English as first language, and institutional academic calendar system, were not statistically significant contributors to persistence. For 63.1% of the participants the dependent variable, persistence, was predicted correctly and the model was significant ( $X^2=137.876$  (31),  $p<.001$ ). More specifically, 24.7% ( $n=259$ ) of participants who did not persist were correctly predicted by the model and 88.1% ( $n=1,419$ ) of participants who did persist were correctly predicted by the model.

The third model contained students' demographic characteristics, the institutional academic calendar system (semester or quarter system) variable and the group (learning community or comparison) variable. Among these variables, seven were significant. The addition of the group variable resulted in gender no longer being a significant contributor to persistence. Whereas being male was a statistically significant and positive contributor to persistence for the first and second models, it was not significant in this model.

For the third model, having a high school diploma was a statistically significant and positive contributor to persistence,  $B=.564$ ,  $p<.01$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.758, indicating that students with a high school diploma were 1.758 times more likely to persist than students without a formal education. Having a vocational or technical certificate was a statistically significant and positive contributor to persistence,  $B=.584$ ,  $p<.05$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.793 indicating that students with a vocational or technical certificate were 1.793 times more likely to persist than students without a formal education. Having a father's highest level of education be a Bachelor's degree was a statistically significant and positive contributor

to persistence,  $B=.387$ ,  $p<.05$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.473, indicating that students whose father's level of education was a Bachelor's degree were 1.473 times more likely to persist than students whose father did not have a formal education. Being 26 years of age or older was a statistically significant and negative contributor to persistence,  $B=-.353$ ,  $p<.01$ , with an odds ratio,  $\text{Exp}(B)$ , of .702, indicating that students between 26 and 60 plus years old were .702 times less likely to persist than those students between 18 and 25 years old. Being a U.S. citizen was a statistically significant and positive contributor to persistence,  $B=.740$ ,  $p<.001$ , with an odds ratio,  $\text{Exp}(B)$ , of 2.096, indicating that students who were U.S. citizens were 2.096 times more likely to persist than students who were not U.S. citizens. Being Black or African American was a statistically significant and negative contributor to persistence,  $B=-.304$ ,  $p<.05$ , with an odds ratio,  $\text{Exp}(B)$ , of .738, indicating that students who were Black or African American were .738 times less likely to persist than students who were not Black or African American. Finally, being in a learning community group was a statistically significant and positive contributor to persistence,  $B=.252$ ,  $p<.01$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.287, indicating that those in the learning community group were 1.287 times more likely to persist than students in the comparison group.

For the third model, the other variables, including mother's level of education, gender, English as first language, and institutional academic calendar system, were not statistically significant contributors to persistence. For 62.9% of the participants the dependent variable, persistence, was predicted correctly and the model was significant ( $X^2=146.953$  (32),  $p<.001$ ). More specifically, 24.7% ( $n=259$ ) of participants who did not persist were correctly predicted by the model and 87.8% ( $n=1,414$ ) of participants who did persist were correctly predicted by the model.

Finally, the fourth model contained students' demographic characteristics, the institutional academic calendar system (semester or quarter system) variable, the group (learning community or comparison) variable, and engagement variables. Among these variables, the seven variables that were significant in the third model were also significant in this model. In addition to these variables, one of the engagement variables, personal encouragement and support (PES), was a statistically significant and positive contributor to persistence,  $B=.255$ ,  $p<.001$ . Being in a learning community group remained a statistically significant and positive contributor to persistence,  $B=.241$ ,  $p<.01$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.272, indicating that those in the learning community group were 1.272 times more likely to persist than students in the comparison group. For 63.6% of the participants the dependent variable, persistence, was predicted correctly and the model was significant ( $X^2=177.828$  (38),  $p<.001$ ). More specifically, 28.1% ( $n=295$ ) of participants who did not persist were correctly predicted by the model and 86.7% ( $n=1,397$ ) of participants who did persist were correctly predicted by the model.

*Hypothesis 1.* Participation in a basic skills curricular learning community will contribute significantly to the persistence of academically underprepared community college students from year one to year two.

This hypothesis was supported because being in a learning community was a statistically significant and positive contributor to student persistence for all of the models that contained this variable. In the fourth model, being in a learning community group was a statistically significant and positive contributor to persistence,  $B=.241$ ,  $p<.01$ , with an odds ratio,  $\text{Exp}(B)$ , of 1.272, indicating that those in the learning community group were 1.272 times more likely to persist than students in the comparison group. However, adding the group variable (learning community or comparison group) into the logistic regression model did not increase correctly

predicting student persistence for the participants from year one to year two. In the second regression model, which contained sociodemographic and institutional variables, persistence was correctly predicted for 63.1% of the participants and in the third regression model, which included sociodemographic, institutional, and group variables, persistence was correctly predicted for 62.9% of the participants.

*Hypothesis 2.* Engagement will contribute significantly to the persistence of academically underprepared community college students from academic year one to year two.

This hypothesis was partially supported. For the fourth model only one engagement variable, personal encouragement and support, was a statistically significant and positive contributor to persistence,  $B=.255, p<.001$ . The remaining engagement factors, preparation, engagement with faculty, engagement with classmates, feedback, and academic encouragement and support, were not statistically significant. However, adding the engagement variables into the logistic regression model did not substantially increase correctly predicting student persistence from year one to year two. In the third regression model, which included sociodemographic, institutional, and group variables, persistence was correctly predicted for 62.9% of the participants and in the fourth regression model, which included sociodemographic, institutional, group, and engagement variables, persistence was correctly predicted for 63.6% of the participants.



Regression on Persistence to the Following Fall Semester

	Model 1			Model 2			Model 3			Model 4		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
High School Diploma	0.585**	0.186	1.795	0.584**	0.186	1.793	0.564**	0.187	1.758	0.585**	0.188	1.795
High School Diploma or GED	0.309	0.247	1.362	0.289	0.247	1.336	0.265	0.247	1.304	0.277	0.249	1.319
High School Diploma or GED Not Complete a Degree	0.601*	0.272	1.824	0.591*	0.272	1.806	0.584*	0.273	1.793	0.563*	0.275	1.755
High School Diploma or GED Not Complete a Degree	-0.334	0.358	0.716	-0.353	0.359	0.703	-0.366	0.36	0.694	-0.38	0.362	0.684
High School Diploma or GED Not Complete a Degree	-0.005	0.402	0.995	-0.021	0.402	0.979	-0.031	0.403	0.97	-0.022	0.405	0.978
High School Diploma or GED Not Complete a Degree	0.491	0.683	1.633	0.472	0.683	1.604	0.43	0.681	1.537	0.542	0.677	1.719
High School Diploma or GED Not Complete a Degree	-0.222	0.496	0.801	-0.241	0.496	0.786	-0.219	0.496	0.803	-0.162	0.498	0.851
High School Diploma or GED Not Complete a Degree	0.032	0.15	1.032	0.034	0.15	1.035	0.036	0.15	1.037	0.058	0.151	1.06
High School Diploma or GED Not Complete a Degree	-0.166	0.225	0.847	-0.157	0.225	0.855	-0.161	0.225	0.851	-0.139	0.226	0.87
High School Diploma or GED Not Complete a Degree	0.295	0.177	1.344	0.311	0.178	1.365	0.311	0.178	1.364	0.317	0.179	1.373
High School Diploma or GED Not Complete a Degree	0.173	0.215	1.189	0.184	0.216	1.202	0.176	0.216	1.192	0.193	0.217	1.212
High School Diploma or GED Not Complete a Degree	0.359	0.187	1.432	0.373*	0.188	1.453	0.387*	0.188	1.473	0.397*	0.189	1.487
High School Diploma or GED Not Complete a Degree	0.268	0.2	1.307	0.285	0.2	1.329	0.288	0.201	1.334	0.314	0.202	1.369
High School Diploma or GED Not Complete a Degree	0.088	0.195	1.092	0.098	0.196	1.103	0.099	0.196	1.104	0.104	0.198	1.109
High School Diploma or GED Not Complete a Degree	-0.159	0.144	0.853	-0.175	0.145	0.84	-0.183	0.145	0.833	-0.185	0.146	0.831
High School Diploma or GED Not Complete a Degree	0.36	0.235	1.433	0.366	0.235	1.441	0.362	0.236	1.436	0.378	0.238	1.459
High School Diploma or GED Not Complete a Degree	-0.046	0.171	0.955	-0.045	0.171	0.956	-0.058	0.172	0.944	-0.045	0.173	0.956
High School Diploma or GED Not Complete a Degree	-0.016	0.193	0.985	-0.023	0.193	0.977	-0.037	0.193	0.964	-0.012	0.194	0.988
High School Diploma or GED Not Complete a Degree	0.048	0.191	1.049	0.05	0.191	1.052	0.051	0.191	1.052	0.066	0.193	1.068
High School Diploma or GED Not Complete a Degree	-0.403	0.206	0.669	-0.404	0.206	0.668	-0.416	0.207	0.66	-0.363	0.208	0.695
High School Diploma or GED Not Complete a Degree	0.297	0.218	1.346	0.288	0.218	1.334	0.283	0.219	1.327	0.335	0.22	1.398

Indicate the reference group for categorical data.

p < .001



*n on Persistence to the Following Fall Semester*

	Model 1			Model 2			Model 3			Model 4		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
	-0.358**	0.126	0.699	-0.365**	0.127	0.694	-0.353**	0.127	0.702	-0.431**	0.129	0.65
	0.173*	0.086	1.189	0.168*	0.086	1.183	0.154	0.086	1.167	0.094	0.088	1.099
	-0.029	0.131	0.971	-0.019	0.132	0.981	-0.017	0.132	0.983	-0.01	0.133	0.99
	0.717***	0.139	2.048	0.734***	0.139	2.083	0.740***	0.139	2.096	0.746***	0.141	2.108
Native American	-0.224	0.377	0.8	-0.271	0.378	0.763	-0.273	0.378	0.761	-0.329	0.381	0.72
Native Hawaiian	0.057	0.147	1.059	0.085	0.148	1.088	0.078	0.148	1.081	0.138	0.151	1.148
	-0.248	0.138	0.78	-0.289*	0.141	0.749	-0.304*	0.141	0.738	-0.319*	0.143	0.727
	-0.227	0.127	0.797	-0.22	0.127	0.803	-0.236	0.128	0.79	-0.221	0.129	0.802
	-0.095	0.172	0.909	-0.068	0.173	0.935	-0.073	0.173	0.93	-0.091	0.175	0.913

reference group for categorical data.



## Chapter 5: Conclusion

This study examined the influence of basic skills curricular learning communities for academically underprepared community college students on persistence from year one (Fall 2003) to year two (Fall 2004). Despite the robust research literature related to student persistence and engagement, colleges and universities continue to be challenged by developing and implementing effective student persistence intervention strategies for academically underprepared students, which are even more important in community colleges where the rate of student attrition is higher than four-year institutions (Bailey, Calcagno, Jenkins, Kienzel, & Leinbach, 2005; Bailey, 2005; Bailey, et al., 2006; Provasnik & Planty, 2008). Related to the student attrition problem is the academic preparation problem, with approximately 60% of students arriving at community colleges without the academic skills to perform college level work and are recommended to enroll in some form of developmental education in their first year (Bailey, 2005). While the public policy debate about higher education—its effectiveness and funding—continues, colleges and universities continue to spend extraordinary resources on students who typically do not meet their goal of completing a college certificate or degree.

This research study was critical considering the challenges this nation faces to identify effective strategies and systems for fostering college student persistence. This study sought to explore how participation in a basic skills curricular learning community was related to student engagement and persistence for academically underprepared community college students. This study was grounded in Tinto's (1993) model of student departure, which continues to serve as the foundation for student persistence research and informs how the use of learning communities—an intervention focused on facilitating social and academic integration—may support student persistence. Tinto's (1993) model posited that an individual's decision to depart

an institution was the result of a longitudinal process consisting of interactions between the individual with given attributes and dispositions and members of the academic and social systems of the institution (Tinto, 1993). Tinto argued that student's intentions and commitments were modified based on their experiences with the social and academic systems. The more integrated these experiences, the more likely they would persist.

Kuh (2001) argued that a central way in which students can be more fully integrated into various academic and social experiences is to be engaged in educationally purposeful activities or programs. Student engagement, and those institutional practices that foster it, are important because they positively influence student learning and persistence (CCSSE, 2002, 2009b; Kuh, 2003b; Kuh, et al., 2006; Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2007; Pascarella & Terenzini, 2005; Zhao & Kuh, 2004). Further, engagement requires individual student behavior *and* institutional practices designed to encourage students to participate in such behaviors (Kuh, 2001). Engagement reframes the national discussion about student success by asserting that student success, or persistence, is not just a student responsibility, but rather a shared responsibility—the institution is responsible for establishing practices that encourage student participation and the student must make the decision to actually participate in such practices. Student engagement is commonly used to summarize the ways that students are involved in educationally intentional activities or engagement benchmarks, such as active and collaborative learning, student effort, academic challenge, student-faculty interaction, and support for learners (CCSSE, 2009a). This study focused on engagement in academically and socially purposeful activities.

While the results of this study may not be generalizable to other institutions or all basic skills curricular learning communities serving academically underprepared students, it represents

an in-depth analysis of an intervention strategy at thirteen community colleges designed to increase student engagement and persistence. Most studies of curricular learning communities have focused on one or two institutions (Ducher, Mino, & Sing, 1999; Jackson-Evans & Van Middlesworth, 1999; Mott, Bums, Chapman, Phillips, & Staub, 1999; Rings, Shovers, Skinner, & Siefer, 1999); however, this study examined such programs across many institutions, hoping to move the discussion toward understanding curricular interventions *across* institutions. This chapter discusses the study's findings, implications for practice, implications for future research, and limitations.

### **Summary of Findings**

This study used both survey and persistence data from the Pathways to Student Success study (Tinto & Engstrom, 2010). Thirteen community college participated in this study and each institution identified a learning community group and a comparison (non-learning community) group, which were surveyed in Fall 2003 with a modified version of the Community College Survey of Student Engagement (CCSSE), a valid and reliable survey instrument used to measure student engagement (Marti, 2010; McClenney & Marti, 2006). Persistence data were then retrieved from the National Student Clearinghouse to track student enrollment from Fall 2003 to Fall 2004. These data, engagement and persistence, were used as an indicator of the effectiveness of basic skills curricular learning communities for academically underprepared students.

The first research question hypothesized that participation in a basic skills curricular learning community would contribute significantly to the persistence of academically underprepared community college students from year one to year two. Consistent with prior research on curricular learning communities at community colleges (Ducher, Mino, & Sing,

1999; Jackson-Evans & Van Middlesworth, 1999; Mott, Bums, Chapman, Phillips, & Staub, 1999; Rings, Shovers, Skinner, & Siefer, 1999), this study found that a significantly greater percentage of participants in the curricular learning community group (62%) persisted from year one to year two than those participants in the comparison group (57%). However, such analysis did not control for sociodemographic variables, of which three, highest credential earned, age, and gender, were significantly different between the learning community and comparison groups, indicating the need to complete additional analysis. Further, the analysis did not control for sampling bias. Students typically self-selected to participate in the basic skills curricular learning community program and participants in this study were not randomly selected.

The significant differences in some of the sociodemographic variables between the two groups (e.g., highest credential earned, age, and gender), coupled with the research literature clearly indicating that sociodemographic variables influence student persistence, suggested the need for a multivariate analysis methodology that controlled for such variables. Based on this and previous research on student persistence (Cabrera, Stampen, & Hansen, 1990; Cofer & Somers, 2001; Dey, 1991; Gross, Hossler, & Ziskin, 2007; Kuh, et al., 2008; Manski & Wise, 1983; St. John, 1990a, 1990b; St. John, Kirshstein, & Noell, 1991; St. John & Noell, 1989; Stampen & Cabrera, 1986, 1988), logistic regression was selected to identify those variables that significantly contributed to student persistence from year one (Fall 2003) to year two (Fall 2004). Four logistic regression models were used to answer the research questions. The following provides a summary of the variables in the four models:

- Model 1 – Sociodemographic variables
- Model 2 – Sociodemographic and institutional variables
- Model 3 – Sociodemographic, institutional, and group variables



- Model 4 - Sociodemographic, institutional, group, and engagement variables

**Pre-entry attributes.** Tinto (1975, 1987, 1993) asserted that an individual's decision to depart an institution was the result of a process consisting of interactions between the individual with given attributes and dispositions and members of the academic and social systems of the institution. The influence of these individual attributes on persistence are presented below, discussing the results related to *achieved* sociodemographic variables (e.g., highest credential earned, father's educational level, mother's educational level) and *ascribed* sociodemographic variables (e.g., age, gender, English as first language, citizenship, and ethnicity).

***Achieved sociodemographic variables.*** Consistent with the research literature, for highest credential earned, having a high school diploma or having a vocational/technical certificate had a significant and positive effect on student persistence across all four logistic regression models. However, none of the other categories for highest credential earned were significant. While none of the categories for father's highest level of education were significant for the first model, having a bachelor's degree was a significant and positive contributor to participant's persistence beginning in the second model and continuing through the fourth model, suggesting that when semester or quarter system for institution, group, and engagement variables were included in the model, this variable emerged as being significant. However, mother's educational level was not significant contributor to persistence in any of the models. What is clear from the literature is that first-generation students are at a distinct disadvantage with regard to student persistence (Chen & Carroll, 2005; Choy, 2001; Horn, Nunez, & Bobbitt, 2000; Lohfink & Paulsen, 2005; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Pascarella, Wolniak, Pierson, & Terenzini, 2003; Pike & Kuh, 2005; Warburton, Bugarin, Nunez, & Carroll, 2001) and the results of this study affirm this finding—having a father with a bachelor's degree

significantly and positively contributed to participant's persistence, even when controlling for all of the other sociodemographic, institutional, group (learning community or comparison), and engagement variables.

*Ascribed sociodemographic variables.* For the remaining sociodemographic variables, age, gender, citizenship, and ethnicity had a significant effect on persistence in at least two or more of the four logistic regression models while English as a first language was not significant in any of the models. More specifically, being a nontraditionally aged student significantly and negatively impacted participant's persistence from year one to year two across all four models, alternatively demonstrating that being a traditional age (18 to 25 years old) college student positively contributed to participant's persistence. This finding is consistent with previous studies that found a negative relationship between age and community college persistence, with older students persisting at significantly lower rates than younger students (Brooks-Leonard, 1991; Hagedorn et al., 2002; Lanni, 1997; Windham, 1995). Being male significantly and positively contributed to participant's persistence for the first two models. However, being male was not significant for the remaining two models, indicating that when group and engagement variables were included in the model and controlled for, the difference was no longer significant. This outcome is similar to the study by Fike and Fike (2008) where they found that after controlling for other variables (e.g., student support services, parent's educational level, developmental coursework, financial aid) gender was no longer a significant predictor of persistence from year one to year two. In the case of this study, once group and engagement variables were included in the analysis, gender no longer had a significant impact on persistence, suggesting that any influence that gender may have had was mitigated by group and

engagement variables. As expected, being a U.S. citizen had a significant and positive impact on student persistence across all four models.

Finally, except for Black or African American participants, ethnicity did not significantly impact predicting persistence for any of the models. Being Black or African American negatively impacted a participant's persistence for models two, three, and four and significantly contributed to persistence. While this finding is consistent with the research literature (Planty et al., 2007), a similar finding was anticipated for Hispanic, Latino, and Spanish and American Indian or Other Native American participants. Kelly (2005) found that Latinos, African Americans, and Native Americans were disproportionately underrepresented at every stage of educational pipeline, including persistence. However, it is possible that the lack of significance related to Latino and Native American persistence in this research may be the result of the other variables not being controlled for in this study, such as level of academic underpreparedness or socio-economic status. For example, both academic underpreparedness and socioeconomic status correlate with ethnicity and have been shown to significantly influence persistence (Bailey, 2005; McCabe, 2000; Terenzini et al., 2001). Low-income students and students of color are disproportionately represented in developmental education courses (Dougherty & Reid, 2007). However, measures for socio-economic background and degree of academic preparation were not included in this study. While all of the participants in this study were in at least one basic skills course, the *level* of their academic underpreparedness and content areas (e.g., reading, writing, and mathematics) were not included in this study, which may inform why some of the results related to ethnicity did not align with the results of previous studies. This issue, and others related to sociodemographic variables, is explored further in the limitations section of this chapter.

**Curricular learning community participation, institutional experiences, and integration.** While Tinto (1975, 1987, 1993) indicated that pre-entry attributes influenced the decision to depart an institution, he also asserted that experiences with the institutions academic and social systems could modify student intentions; the more integrated these experiences, the more likely students were to persist. Further, during these academic and social experiences (engagement) students derived a sense of belonging. The curricular learning communities were designed to strengthen student experiences with the institution's academic and social systems. They sought to change the very way in which students engage in the institution. In this study, survey data were used to measure engagement and from these single-item measures, composite measures (factors) were developed. Before discussing the results related to the influence of these engagement variables on student persistence, it is both relevant and important to compare the levels of engagement between curricular learning community group and comparison group participants, as these curricular learning communities were designed to foster student engagement.

***Encouragement and support.*** As expected, this study found that learning community participants reported significantly higher levels of institutional emphasis on academic encouragement and support (AES) more than those participants in the comparison group for all four composite measures that comprised the AES factor—"encouraging you to attend class," "encouraging you to spend significant amounts of time studying," "providing the support you need to succeed at this college," and "encouraging you to make use of academic support services." The mean score for AES was significantly higher for learning community participants than comparison group participants; however, the effect size was small, suggesting no practical difference between the two groups. As for personal encouragement and support (PES),

curricular learning participants reported significantly higher levels of institutional emphasis than those participants in the comparison group for all four single-item measures that comprised the PES factor—“providing the support you need to thrive socially,” “helping you cope with your non-academic responsibilities,” “encouraging you to make contact with students from different economic, social, and racial or ethnic backgrounds,” and “encouraging you to know your classmates on a personal level.” The mean score for PES was significantly higher for curricular learning community participants than comparison group participants; however, the effect size was small. This finding suggests there was no practical difference in perceived encouragement and support between the learning community and comparison group participants.

***Course preparation.*** Coming to class prepared is fundamental to active and collaborative learning and learning communities are designed to foster peer-to-peer collaboration, resulting in both learning and a sense of community (Cabrera, Colbeck, & Terenzini, 2001; Cabrera, et al., 2002; Cabrera & La Nasa, 2002; Luvas-Briggs, 1984; MacGregor, 1991; Tinto, 1997; Tinto & Goodsell-Love, 1993; Tinto, Goodsell-Love, & Russo, 1994; Tinto & Russo, 1994; Wilcox, del Mars, Stewart, Johnson, & Ghery, 1997; Witmer, 1991). As such, it was important to measure student’s engagement with activities associated with preparation—“preparing for class with classmates,” “preparing for class with the assistance of a tutor,” and “preparing for class by yourself.” Only one of these single-item measures, “preparing for class with your classmates,” was significantly different, with curricular learning community participants reporting more frequently doing this activity than the comparison group participants. Although the two other single-item measures were not significantly different between the two groups, the mean score for course preparation (PREP), which was comprised of these three single-item measures was significantly different; however, the effect size for PREP was small. This finding suggests there

was no practical difference in preparing for class between the learning community and comparison group participants.

***Engagement with instructors.*** Curricular learning communities are intended to change the relationship between a student and the instructor(s), fostering a shared responsibility for student learning, and encouraging student-instructor interaction (Cross, 1983; Tinto, 1997). These curricular learning communities were designed to foster more student-faculty engagement. This study measured student-faculty engagement by four single-item measures—“discussed grades of assignments with and instructor,” talked about academic or career plans with an instructor,” “used e-mail to communicate with your instructor,” and “discussed ideas from your readings or classes with an instructor outside of class.” Of these four single-item measures, all, except for “used e-mail to communicate with your instructor,” were significantly different, with curricular learning community participants reporting more frequently doing these activities than the comparison group participants. The mean factor score for engagement with instructors (ENGIN), which was comprised of these four single-item measures, was significantly higher for curricular learning community participants than comparison group participants; however, the effect size for ENGIN was small. This finding suggests there was no practical difference in engagement with instructors between the learning community and comparison group participants.

***Engagement with classmates.*** Curricular learning communities also aim to change the relationships between students. Rather than using traditional teaching pedagogies, whereby students are typically passive receipts of information in the classroom, curricular learning communities are designed to foster educationally purposeful relationships between students, whereby they perceive themselves and their peers as educators (Smith & MacGregor, 1992).

These curricular learning communities were created to foster more student-student engagement, which, in this study, was measured by three single-item measures—“worked with classmates outside of class to prepare for class assignments,” “tutored or taught other students,” and “discussed ideas from your readings with classmates outside of class.” The mean score for all of these single-item measures were significantly different, with curricular learning community participants reporting more frequently doing these activities than comparison group participants. The mean score for engagement with classmates (ENGCLM), which was comprised of these three single-item measures, was significantly higher for curricular learning community participants than comparison group participants; however, the effect size for ENGCLM was small. This finding suggests there was no practical difference in engagement with classmates between the learning community and comparison group participants.

**Feedback.** Since curricular learning communities are created to change the nature of the relationship between students and between students and instructors, whereby there is more engagement (Barr and Tagg, 1995; Smith & MacGregor, 1992), one alternative way of measuring this engagement is students receiving feedback from instructors and peers. In this study, this was measured by two single-item measures—“received feedback from your instructors on your performance” and “received feedback from your classmates on your performance.” While there was no significant differences between curricular learning community participants and comparison group participants for “received feedback from your classmates on your performance,” there was a significant difference for “received feedback from your instructors on your performance,” with curricular learning community participants having a higher mean score for this single-item measure. The mean score for feedback (FEED), which was comprised of these two single-item measures, was higher for curricular learning community

participants than comparison group participants; however, the effect size for FEED was small. This finding suggests there was no practical difference in receiving feedback between the learning community and comparison group participants.

**Curricular learning community participation, dimensions of engagement, and persistence.** The first research question hypothesized that participation in a basic skills curricular learning community would contribute significantly to the persistence of academically underprepared community college students from year one to year two. The third logistic regression model, used to test this hypothesis and comprised of sociodemographic, institutional, and group variables, was significant and persistence was predicted for 62.9% of the participants in the study. Being in the curricular learning community group significantly and positively contributed to persistence from year one to year two. Curricular learning community participants were 1.287 times more likely to persist than students in the comparison group. This finding is congruent with other studies of curricular learning community studies at individual community colleges (Ducher, Mino, & Sing, 1999; Jackson-Evans & Van Middlesworth, 1999; Mott, Bums, Chapman, Phillips, & Staub, 1999; Rings, Shovers, Skinner, & Siefer, 1999). It is important to note that while the participants in the curricular learning community were more likely to persist, a causal relationship cannot be made between participating in a learning community and persistence from year one to year two. Further, adding the group variable (learning community or comparison group) into the logistic regression model did not increase correctly predicting student persistence for the participants from year one to year two. In the second regression model, which included sociodemographic and institutional variables, persistence was predicted correctly for 63.1% of the participants. In the third regression model, which included



sociodemographic, institutional, and group variables, persistence was predicted correctly for 62.9% of the participants.

The second research question hypothesized that engagement would contribute significantly to the persistence of academically underprepared community college students from year one to year two. The fourth logistic regression model, used to test this hypothesis and comprised of sociodemographic, institutional, group, and engagement variables, was significant and persistence was predicted for 63.6% of the participants in the study. However, the second hypothesis was only partially supported as only one engagement variable, personal encouragement and support (PES), was a statistically significant and positive contributor to student persistence from year one to year two. Adding the engagement variables into the logistic regression model did not substantially increase correctly predicting student persistence from year one to year two. While the fourth regression model, which included sociodemographic, institutional, group, and engagement variables, correctly predicted persistence for 63.6% of the participants, the third model, which did not include the engagement variables still allowed for persistence to be correctly predicted for 62.9% of the participants.

The finding that personal encouragement and support positively contributed to persistence aligns with the research of Sedlacek (1993) who studied the use of non-cognitive variables in predicting student retention. Sedlacek (1993) found that for nontraditional students, or students of color, the availability of a “strong support person(s),” someone they could rely upon to receive help, support, and encouragement, was a significant and positive contributor to student persistence. Further, Rendon (1994) explored the role of validation in the success of nontraditional community college students. More specifically, Rendon (1994) found that there were three types of validation that fostered student persistence for this population: a) in-class

academic validation, b) out-of-class academic validation, and c) interpersonal validation in class and outside of class (pp. 40-43). She found that “what had transformed these students were incidents where some individual, either in- or out-of-class, took an active interest in them—when someone took the initiative to lend a helping hand, to do something that affirmed them as being capable of doing academic work and that supported them in their academic endeavors and social adjustment” (pp.43-44). Notably, Rendon (1994) made it explicit that validation is not the responsibility of the individual student, but rather the responsibility of the institution’s faculty and administrators.

While personal encouragement and support was a significant and positive contributor to student persistence, the remaining engagement variables, academic encouragement and support, preparation, engagement with instructors, engagement with classmates, and feedback were not statistically significant, which is counter to what was expected. Further, as previously discussed in this chapter, engagement levels between the learning community and comparison groups were not practically different. The means for the single-item measures provide insight on the relatively low mean scores for both groups across the single-item measures. For example, for “preparing for class by yourself,” which was part of the PREP factor, curricular learning community participants had a mean of 1.936 and comparison group participants had a mean of 1.886. Both were relatively low scores, indicating that participants in both groups spent less than 10 hours per week preparing for class by oneself. Another example is “worked with classmates outside of class to prepare for class assignments,” which was part of the ENGCLM factor. For this single-item measure, curricular learning community participants had a mean of 2.515 and the comparison group had a mean of 2.420, indicating that students in both the learning community and comparison groups engaged in this practice somewhere between “rarely” (2.0) and

“sometimes” (3.0). The means for both groups were relatively low, with students in both groups regularly not engaging in these educationally purposeful activities (ENGIN, ENGCLM, FEED) “often” or “very often.” As a result, there may not have been enough engagement happening from participants in either group, typically in their first term in college, to significantly contribute to persistence from year one to year two.

In summary, curricular learning community participation contributed significantly and positively to student persistence from year one to year two; however, it did not increase correctly predicting persistence from year one to year two for participants. In addition, measures of engagement that were used to measure academic and social institutional experiences and integration during the initial term, were, for the most part, not statistically significant contributors to student persistence, with personal encouragement and support being the only significant and positive engagement variable that contributed to student persistence in this study. While personal encouragement and support was significant, this variable, like the group variable (learning community group or comparison group) did not substantially increase correctly predicting student persistence. As will be discussed in more detail later, this finding may be the result of having participants complete the questionnaire used to measure engagement relatively early on in the semester—approximately week six for those on the quarter system and week nine for those on the semester system—whereby students did not have enough time to learn and demonstrate these engagement behaviors. Students this early in their college career, six to nine weeks, may still be learning how to navigate, or “work,” the college system. Sternberg (1985, 1986) referred to this as “contextual intelligence”—the ability to understand the system and navigate it to your advantage. Sedlacek (1993) argued that for students from nontraditional backgrounds, it is important to learn how to interpret the college system in ways that foster their

success. The students in this study may have simply not been in college long enough to develop this ability or to develop the confidence to regularly enact these academic skills and habits.

## **Implications**

**Implications for practice.** The research literature indicates that learning communities are an effective intervention for increasing student engagement and integrating them into institutional academic and social systems (Tinto, 1993). Despite the extensive research on Tinto's (1993) model of student departure, there is far less research on how to practically, via curricular interventions, increase student engagement, particularly related to academic and social integration. Curricular learning communities are one programmatic intervention that can facilitate student engagement, the participation in educationally purposeful activities (Kuh, 2003b). Further, in several institution-specific studies learning communities at community colleges have demonstrated the ability to foster student persistence, with those in learning communities persisting at significantly higher rates than those not in learning communities (Ducher, Mino, & Sing, 1999; Jackson-Evans & Van Middlesworth, 1999; Mott, Bums, Chapman, Phillips, & Staub, 1999; Rings, Shovers, Skinner, & Siefer, 1999). This study not only sought to understand how curricular learning community participation and engagement influenced student persistence, but notably, persistence for students that were academically underprepared and less likely to be engaged in social and academic experiences that foster student retention (Astin, 1997; Cabrera, Nora, & Castaneda, 1992; Lohfink & Paulsen, 2005; Nunez, et al., 1998; Pascarella, et al., 2003; Pike & Kuh, 2005; Richardson & Skinner, 1992).

While there is an extensive body of literature related to student persistence, learning communities, and developmental education, the literature related to the use of curricular learning communities as a method for strengthening academic skills and increasing student persistence is

limited. Further, the research that has been completed in this area has typically focused on specific institutions or programs and only tracked student persistence within an institution (Ducher, Mino, & Sing, 1999; Jackson-Evans & Van Middlesworth, 1999; Mott, Bums, Chapman, Phillips, & Staub, 1999; Rings, Shovers, Skinner, & Siefer, 1999). However, this study provides implications *across* institutions and programs and tracked student enrollment at any institution of higher education, allowing for more thorough analyses on the effect of basic skills curricular learning community participation on engagement and persistence.

The results of this study indicate that basic skills curricular learning communities—not just at a specific institution or for a specific type of basics skills—but across the institutions and programs, *may* not be enough to increase student engagement or to increase correctly predicting student persistence from year one to year two. After controlling for sociodemographic, institutional, group, and engagement variables, participants in a one term (quarter or semester) basic skills curricular learning community group were 1.272 times more likely than students in the comparison group to persistent from year one (Fall 2003) to year two (Fall 2004). However, this study does not allow for drawing conclusions on a causal relationship between curricular learning community participation and persistence. Notably, adding group (learning community or comparison group) and engagement variables into this study did not change the overall predictability of student persistence from year one to year two. Across all four regression models, persistence was correctly predicted for approximately 63% of the participants and the remaining 37% could not be predicted. This suggests there are number of other variables that influence student persistence that were not included in this study. In fact, it may be these other variables, and not curricular learning community participation, that contributes to student persistence from year one to year two.

The only engagement variable that was significant in contributing to student persistence was “personal encouragement and support.” Further, adding the engagement variables into the model did not substantially increase correctly predicting student persistence from year one to year two. In addition, there were not practical differences in levels of engagement between the learning community and comparison group participants and this finding does not align with the research literature. However; the survey instrument was completed by participants after only six or nine weeks into the quarter or semester. There may have been differences in levels of engagement between the learning community and comparison groups had the questionnaires been completed by participants later in the quarter or semester, or perhaps the following quarter or semester. The findings of this study suggest that community college administrators, instructors, and scholars should continue to study curricular learning communities as a strategy to increase student engagement and persistence. In 2000, Parsad and Lewis (2003) found that 42% of all first-year community college students were enrolled in some form of developmental education. This, coupled with the fact that the majority of community college students do not finish a certificate or degree program (Bailey, Calcagno, Jenkins, Kienzel, & Leinbach, 2005; Bailey, 2005; Bailey, et al., 2006; Provasnik & Planty, 2008), underscores just how important it is for community colleges to identify effective interventions. The results of the study suggest that one-term basic skills curricular learning communities may not be enough to foster student engagement and persistence.

While many of the participants in this study would be classified by many researchers as at risk because they were students of color, first generation students, English was a second language, and all were academically underprepared, it remains important to shift the national conversation away from identifying deficiencies of various populations to identifying the

intervention strategies, or institutional practices, that increase student engagement. Similarly, Harper (2009) wrote:

...the popular approach of only determining *what students do* to become engaged must be counterbalanced by examinations of *what educators do* to engage students. Put differently, questions concerning effort must be shifted from the individual student to her or his institution. Effective educators avoid asking, what's wrong with these students, why aren't they getting engaged? Instead, they aggressively explore the institution's shortcomings and ponder how faculty members and administrators could alter their practices to distribute the benefits of engagement [more equitably]. (p. 41)

The results of this study suggest that these basic skills curricular learning communities may not have had the impact that was expected. However, the limitations of this study (e.g., sampling methodology, the absence of relevant program and participant variables, etc.) also suggest that it would not be prudent to assume that basic skills curricular learning community are not an effective intervention strategy for academically underprepared community college students. More research needs to be completed on basic skills curricular learning communities to determine their influence on student engagement and persistence. It is not enough to continue to research the differences of various sub-populations, but rather it is equally, if not more, important to identify those institutional strategies that may increase student success across these different sub-populations, such as curricular learning community programs. These programs, or intervention strategies, are designed to change the very way in which students learn and develop community in the classroom—representing a restructuring that moves away from traditional teaching pedagogies to those that facilitate connection, active engagement, and reflection (Smith, et al., 2004).

**Implications for future research.** As part of the Achieving the Dream project, the Community College Research Center (2011) at Columbia University published the *Field Guide for Improving Student Success* and this report described how community colleges could approach the five step process for increasing student success. These five steps were: (a) commit to improving student outcomes; (b) use data to prioritize actions; (c) engage stakeholders; (d) implement, evaluate, and improve intervention strategies; and (e) establish a culture of continuous improvement. This study, while having several limitations, is one example of an approach to informing the discussion about those institutional practices, such as curricular learning communities, that may foster student engagement and persistence. Senior leaders at the thirteen community colleges that participated in this study committed to identifying and establishing student success programs; used data to identify success gaps, such as those students in traditional developmental education programs who were not persisting; engaged campus stakeholders and the Lumina Foundation researcher; implemented a basic skills curricular learning community program as an approach to increase the success of those students in developmental education, and; collected and shared data about curricular learning community participants and those in a comparison group which was provided to the research team. Future research should follow a similar process—focusing on those institutions taking student success seriously, purposefully designing and implementing student success programs, and committing to the evaluation and assessment of such programs to inform future practices. This approach to research allows the findings to be used in a very practical manner and allows institutions to better understand what the institution can do to help increase student engagement and persistence.

This study points to the need to further direct research efforts not just within institutions, but across institutions. This study, which began in 2003, was one of the first studies to look at



basic skills curricular learning community effectiveness, as defined by student persistence and engagement, across community colleges and programs. Further, this study was one of the first to track student enrollment from year one to year two beyond the boundaries of a specific institution—determining not just if a student re-enrolled at the same institution, but any institution, accounting for those participants who, in other studies, would have been considered dropouts when in fact they had simply enrolled at a different institution. This is an important distinction given the interest in determining persistence not just within an institution, but persistence at any institution and future research areas should follow this method—tracking enrollment at any institution (Bailey & Alfonso, 2005). Further, while this study tracked the participant's enrollment from year one to year two, it did not extend beyond the second year to see if participating in a basic skills curricular learning community significantly contributed to participants attaining a certificate or degree. While year one to year two persistence is certainly a notable program performance metric since it is when institutions experience the greatest attrition (Tinto, 1993), future research should include multiple institutions and programs and track the enrollment of the participants over six years to identify how participation in the program influences persistence beyond the second year. The results of this study suggest that one-term curricular learning communities may not be enough to increase student engagement, or perhaps, the benefits may be deferred to later in the term or the following term. As such it would be helpful for research to focus on sustained, or long-term, intervention strategies, such as year-long or two-year curricular learning community programs.

In this study, the curricular learning community group participants were not practically more engaged in educationally purposeful activities than comparison group participants. Further, the findings also indicate that participants in both the learning community and

comparison groups were participating in some of these activities at relatively low levels. However, the research is clear—students who engage in these activities (e.g., engagement with students and faculty) are more likely to persist (Kuh et al, 2008; Kuh, et al., 2007; Kuh et al., 2006). For this study, the survey instrument was completed by participants at the end of October. For those participants at institutions on a quarter system, this administration period was approximately six weeks into the quarter; for those participants at institutions on a semester system, this was approximately nine weeks into the semester. Future research should consider having participants complete the instrument at the end of a semester or quarter or the following semester or quarter, allowing students to have completed at least one full semester or quarter in a curricular learning community before measuring levels of engagement. Identifying those institutions that have higher levels of student engagement and studying these institutions, along with having study participants complete the survey questionnaire at the end of the term or quarter, may result in a better understanding of the influence of curricular learning community participation on engagement. Further, additional research should be conducted to understand the long-term effects of participation in basic skills curricular learning communities to determine if participation in such a program has any carry-forward effects, such as increased engagement levels for terms following participation in the program.

There were a number of potentially important variables absent from this study. While this study included many data variables associated with student persistence, there were a number of individual (e.g., student intentions/goals, academic preparation, academic performance, amount of college coursework completed), programmatic (e.g., type of learning community, type of and level of basic skills course), and institutional variables (e.g., region, enrollment size) not included in this study which should be a part of future research for basic skills curricular learning

communities. Consideration for such variables, including controlling for them in multivariate analysis, may provide additional information about how participating in a basic skills curricular learning community contributes to student engagement and persistence.

While this study examined student engagement with their classmates and faculty, future research should explore student engagement with external communities and how to operationalize these aspects of engagement into possible survey questions to examine their influence on student persistence. Examining this issue further for academically underprepared community college students may be even more important since researchers have found that students of color benefit significantly from the support of external networks and communities (Cabrera et al., 1999; Delgado Bernal, 2002; Gloria et al., 1999; Guiffrida, 2004, 2005; Hendricks et al., 1996; Hurtado, Carter & Spuler, 1996; Nora & Cabrera, 1996; Rosas & Hambrick, 2002). The issue of external communities may be even more significant for the participants in this study who all attended a community college, which lacked some of the social and academic programs and services often associated with residential colleges. Further, student engagement, and the way in which this is manifested by students of color at predominantly white institutions, may in itself be culturally biased and student engagement as a construct should receive further examination and critique (Hawkins & Larabee, 2009).

The study by Fogarty et al. (2003) indicated that students at community colleges were more likely to experience their personal and college lives more distinctly and may need to work harder at transitioning into the academic and social communities. Further, Fogarty et al. (2003) found that community college students were more likely to struggle in becoming incorporated into the college—stepping onto campus to attend classes and then leaving campus. These findings suggest that community college students are at a distinct disadvantage at integrating into

the institution's academic and social systems, a clear tenet of Tinto's (1993) model. Further, all of the students in this study were in at least one basic skills course, indicating that they were, in all likelihood, academically underprepared for college level coursework. While the Tinto (1993) model includes considerations for pre-entry attributes, including prior schooling, it does not further consider the potential implications of academic underpreparedness and its influence on a student's academic and social experiences, which, in turn, may influence the departure decision. Tinto's (1993) model leaves absent *the nature* of academic and social interactions and communities across diverse racial/ethnic groups. The intersection of cultural diversity, academic underpreparedness, and institution type on student persistence represent areas of future inquiry.

### **Limitations**

One limitation of this study is related to the data collected through a survey instrument (engagement data) and the National Student Clearinghouse (persistence data). There were a number of data variables that were not included in the survey design that have been shown to influence student persistence. These data variables include gift aid (e.g., scholarships, grants and work study) (Murdock, 1990; Pascarella & Terenzini, 2005; Porter, 1991; St. John, 2002; Swail, 2003; The Pell Institute, 2004;), part-time versus full-time student status (Berker, et al., 2003; Berkner, et al., 2002; Carroll, 1989; Chen & Carroll, 2007; O'Toole, et al., 2003), and socioeconomic status (Cabrera, La Nasa, et al., 2001; Choy & Bobbitt, 2000; Terenzini, Cabrera, & Bernal, 2001). In addition, no academic preparation or performance variables—academic rigor of high school, high school grade point average, college course grades, number and type of developmental courses enrolled in, passing developmental courses, and college grade point average—were included in this study, the result of the open admissions processes of community colleges and college academic performance data not being collected from the respective

community colleges. These academic preparation and performance data have proven to be important in predicting student persistence, with high school rigor, passing courses, having to enroll in fewer basic skills courses, higher course grades and grade point averages being a significant and positive predictor of student persistence (Adelmann, 1999, Adelmann, 2006; Stoutland & Coles, 2009). Further, while all of the participants in this study were in at least one basic skills course, indicating that all of the participants were academically underprepared for college level coursework, the magnitude of underpreparedness was not included in this study. Given that measuring academic underpreparedness often differs from state-to-state and institution-to-institution, it would be difficult to compare such data even if it had been collected from each institution. Further, the amount of completed college coursework was not controlled for in this study. Finally, data related to student goals in attending the respective community college—to obtain a degree, to transfer to a four-year college, to obtain job skills—were not included in this study; however, goals have been shown to influence student persistence at community colleges (Bers & Smith, 1991; Fralick, 1993).

In addition to these individual participant-related data not being included in this study, there were also relevant program data absent from this study. While the research literature (Fike & Fike, 2008) suggests that receiving a passing grade in basic skills reading, mathematics, or writing are all indicators of student persistence, the strongest predictor, of the three, for year one to year two student persistence was passing a basic skills reading course (Dixon, 1993; Fike & Fike, 2008; Fleischauer, 1997), and for degree attainment, basic skills mathematics was the subject most critical to student's attaining a degree (Hall & Ponton, 2005; Waycaster, 2001). As such, not including the type of basic skills course(s) associated with each of the thirteen curricular learning community programs is a limitation of this study.

Finally, all of the participants in this study were in at least one basic skills course linked to another course as a part of a basic skills curricular learning community program at the community college. As such, the results of this study may not be applicable to a number of other learning community programs at a wide variety of colleges and universities across the country and where curricular learning communities reflect a wide variety of structures. The results of this study are limited in their generalizability to other types of learning community programs (e.g., residential) and other types of institutions (e.g., private, four-year). Any discussion about the results of this study should be limited to basic skills curricular learning communities at community colleges.

## **Conclusion**

This study examined the impact of basic skills curricular learning communities on academically underprepared community college students to determine if such programs were associated with student engagement and persistence from year one to year two. The conceptual framework that informed this study was Tinto's (1993) longitudinal model of student departure. In addition, the research on student engagement (Kuh, 2003b) served as a backdrop for considering how the basic skills curricular learning community programs may have influenced students; perceptions of their institution (support and encouragement) and their experiences (preparation, engagement with instructors, engagement with classmates, and feedback) and, in turn, contributed to student persistence. The results revealed no practical differences in levels of student engagement between learning community and comparison participants. In addition, only one engagement variable—personal encouragement and support—significantly and positively contributed to student persistence from year one to year two, and engagement variables did not substantially increase correctly predicting student persistence. While basics skills curricular

learning community participants were 1.272 times more likely to persist from year one to year two than those students in the comparison group, the analysis did not allow for any causal conclusions.

College completion rates have increasingly become a key aspect of the public discussion about higher education accountability and yet community colleges continue to be challenged in creating and implementing programs that effectively increase student persistence. Recently President Obama stated that “by 2020, American will once again have the highest proportion of college graduates in the world.” However, much work lies ahead if this goal is to be realized. In pursuit of this goal at community colleges, one such program that should receive continued consideration and research are basic skills curricular learning communities—an intervention designed to strengthen the academic skills of underprepared students, facilitate student engagement, and foster student persistence. This approach suggests that student retention is ultimately about institutional change—restructuring the college classroom, strengthening pedagogy, and encouraging and supporting students—to foster student engagement and persistence.

## **Appendix A: Pathways to Student Success Advisory Board**

Norena Badway, University of the Pacific, California

Peter Bahr, University of California, Davis

Barbara Bonham, Appalachian State University, North Carolina

Barbara Cambridge, American Association of Higher Education

Rochelle De LaCruz, Seattle Central Community College, Washington

Lynn Dunlap, Skagit Valley Community College, Washington

Pam Dusenberry, Shoreline Community College, Washington

Norton Grubb, University of California, Berkeley

Jodi Levine Laufgraben, Temple University, Philadelphia

Jean MacGregor, The Evergreen State University, Washington

Gillies Malnarich, The Washington Center for Improving the Quality of Undergraduate Education, The Evergreen State University

Roberta Matthews, Brooklyn College, New York

Bob McCabe, League for Innovation in the Community College

Kay McClenney, The Community College Survey of Student Engagement, The University of Texas-Austin

Bill Moore, Washington State Board for Community & Technical Colleges

Rita Smilkstein, North Seattle Community College, Washington

Barbara Leigh Smith, The Evergreen State University, Washington

Jan Swinton, Spokane Falls Community College, Washington

Phylis Van Slyck, LaGuardia Community College, New York



## Appendix B: Pathways to Student Success Survey Instrument

### Instructions

To ensure that your responses to the attached questionnaire are confidential, we ask you to complete this page before you begin, tear it off, and hand it in separately. The survey number on the bottom of this page and on the attached questionnaire will be used by the research staff to connect you to your responses. Only the research staff will have access to this information. In no case will we release any data that can connect you to any of your responses.

We greatly appreciate your help with this study.

Name: \_\_\_\_\_  
Last Name First Name Middle Initial

What is your student identification number? \_\_\_\_\_

OR

What is your social security number? \_\_\_\_\_

What is your birthday? \_\_\_\_\_  
Month Day Year

Should we need to contact you, can you please provide the following information:

What is your email address? \_\_\_\_\_

What is a contact phone number? \_\_\_\_\_

What is your mailing address?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
City State Zip Code

Participation in this study is voluntary.  
Completing the survey indicates your consent to participate.

\* Note: This questionnaire has been derived with permission from the National Survey of Student Engagement at Indiana University and the Community College Survey of Student Engagement at the University of Texas at Austin. Serial #

Please answer the following set of questions about your experience at this institution during the current academic year. Please use a number 2 pencil only. Mark your answers as shown in the following example. Example ● Correct Mark ⊗ ⊖ ○ Incorrect Marks

1. DURING THE CURRENT ACADEMIC YEAR AT THIS INSTITUTION, about how often have you done each of the following?

	Very Often	Often	Sometimes	Rarely	Never
a. Asked questions in class or contributed to class discussions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Made a presentation in class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Prepared drafts of a paper or assignment before turning it in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Worked on a paper or project that required integrating class ideas, information, or skills <u>from different classes</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Put together ideas or concepts from different courses during class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Come to class without completing readings or assignments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Worked with classmates <u>during class</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Worked with classmates <u>outside of class</u> to prepare class assignments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Tutored or taught other students (paid or voluntary)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Participated in a community-based project as part of a regular course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Used a listserv, chat group, internet, etc. to discuss or complete an assignment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Used email to communicate with an instructor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Used email to communicate with <u>other classmates</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Discussed grades or assignments with an instructor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
o. Talked about academic or career plans with an instructor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
p. Talked about academic or career plans with an advisor or counselor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
q. Discussed ideas from your readings or classes with <u>instructors outside class</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
r. Discussed ideas from your readings or classes with <u>classmates outside class</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
s. Discussed ideas from your readings or classes with <u>others outside class</u> (family members, co-workers, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
t. Received feedback (written or oral) from <u>your instructors</u> on your performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
u. Received feedback (written or oral) from <u>your classmates</u> on your performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
v. Missed class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
w. Worked harder than you thought you could to meet <u>an instructor's</u> standards or expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
x. Worked harder than you thought you could to meet <u>your classmates</u> standards or expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
y. Had serious conversations with students of different race, ethnicity, or religious beliefs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. During the current school year, how much has your coursework at this institution emphasized the following mental activities?

	Very Much	Quite a Bit	Some	Very Little
a. Memorizing facts, ideas, or methods from your courses and readings so you can repeat them in pretty much the same form	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Analyzing the basic elements of an idea, experience, or theory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Synthesizing and organizing ideas, information, or experiences in new ways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Making judgments about the value or soundness of information, arguments, or methods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Applying theories or concepts to practical problems or in new situations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Using information you have read or hear to perform a new skill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Integrating ideas, information, or skills from different classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. How much does this institution emphasize each of the following?

	Very Much	Quite a Bit	Some	Very Little
a. Encouraging you to spend significant amounts of time studying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Providing the support you need to help you succeed at this college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Encouraging you to make contact with student of different economic, social, racial, or ethnic backgrounds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Helping you cope with your non-academic responsibilities (work, family, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Providing the support you need to thrive socially	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Providing the financial support you need to afford your education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Encouraging you to attend class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Encouraging you to make use of academic support services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Encouraging you to know your classmates on a personal level (name, background, interests, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. How much has YOUR EXPERIENCE AT THIS INSTITUTION contributed to your knowledge, skills, and personal development in the following areas?

	Very Much	Quite a Bit	Some	Very Little
a. Acquiring a broad general education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Acquiring job or work-related knowledge and skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Writing clearly and effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Speaking clearly and effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Thinking critically and analytically	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Using computing and information technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Working effectively with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Learning effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Contributing to the welfare of your community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Developing clearer career goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Developing a sense of confidence in your academic abilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. About how many hours do you spend on average in a 7-day week doing each of the following?

	Hours per week					
	None	1 to 5	6 to 10	11 to 20	21 to 30	More than 30
a. Preparing for class <u>by yourself</u> (studying, reading, writing, doing homework, rehearsing or other activities related to your program)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Preparing for class <u>with your classmates</u> (studying, reading, writing, rehearsing or other activities related to your program)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Preparing for class with the assistance of a tutor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Working for pay on campus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Working for pay off campus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Participating in college-sponsored activities (organizations, campus publications, student government, sports, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Providing care for dependents (parents, children, spouse, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Commuting to and from classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. In how many classes are you presently enrolled at this institution?

- 1 class             2 classes             3 classes             4 classes or more

7. Did you participate in a summer academic program (e.g. summer bridge) prior to the current academic term?

- Yes             No

8. Are you employed during the current term?

- No             Yes, less than 20 hours per week     Yes, more than 20 hours per week

9. Mark the number that best represents the quality of your relationship with people at this institution (where N/A = do not know or not applicable).

Your relationship with:

Classmates

Friendly, Supportive     7     6     5     4     3     2     1     N/A    Unfriendly, Unsupportive

---

Other Students (not classmates)

Friendly, Supportive     7     6     5     4     3     2     1     N/A    Unfriendly, Unsupportive

---

Instructors

Available, Helpful, Sympathetic     7    6    5    4    3    2    1    N/A    Unavailable, Unhelpful, Unsympathetic

---

Academic Support Staff

(e.g. counselor, advisors, tutors)

Helpful, Considerate Sympathetic     7    6    5    4    3    2    1    N/A    Unhelpful, Inconsiderate Unsympathetic

---

10. This section has two parts. Please answer both sections, indicating (1) HOW OFTEN you use the following services and (2) HOW SATISFIED you are with those services AT THIS INSTITUTION.

	(1) FREQUENCY OF USE				(2) SATISFACTION			
	Often	Sometimes	Rarely/ Never	N.A.	Very	Some- what	Not At All	N.A.
a. Academic advising/planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Career counseling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Job placement assistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Tutoring (peer, group, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Academic support (writing, math, study skills, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Child care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Financial aid advising	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Computer lab	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Transfer credit assistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Services for people with disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Residential life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Parking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Are your friends supportive of your going to college?

Yes                       No                       NA (Unable to judge or does not apply)

12. Is your family supportive of your going to college?

Yes                       No                       NA (Unable to judge or does not apply)

13. When do you plan to take classes at this institution again?

- Uncertain about my plans
- I will return next term or academic year
- I will not be returning because I accomplished my goal(s) during this term
- I will not be returning for other reasons

14. How likely is it that the following issues would cause you to withdraw FROM THIS INSTITUTION?

(Please respond to each item)

	Very Likely	Likely	Somewhat Likely	Not Likely
a. Working full-time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Caring for dependents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Academicall unprepared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Lack of finances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Educational goals changed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Change in career plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Moving/relocating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Lack of institutional support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Lack of family support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Sense of isolation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Sense of not fitting in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Quality of teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Other (health, military, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Where do you currently reside?

- Alone
- At home with family
- In an off-campus apartment or house
- In a campus residence hall
- Other

16. How would you evaluate your educational experience at this institution THIS TERM?

- Excellent
- Very Good
- Good
- Fair
- Poor

17. OVERALL, how would you evaluate your educational experience at this institution?

- Excellent
- Very Good
- Good
- Fair
- Poor

18. Would you recommend this institution to a friend or family member?

- Yes
- No

19. Mark your age group?

- 17 or younger
- 18
- 19 to 22
- 23 to 25
- 26 to 29
- 30 to 39
- 40 to 49
- 50 to 59
- 60 plus

20. Your gender:

- Male       Female       Transgender

21. Is English your native (first) language

- Yes       No

22. What is your citizenship status?

- US Citizen       International       Other

23. What is your racial/ethnic identification?

- American Indian or other Native American  
 Asian, Asian American or Pacific Islander  
 Native Hawaiian  
 Black or African American  
 White, Non-Hispanic  
 Hispanic, Latino, Spanish  
 Other

24. What is the highest academic credential you have earned?

- None  
 High school diploma  
 GED  
 Vocational/technical certificate  
 Associate's degree  
 Bachelor's degree  
 Master's/doctoral/professional degree  
 Other

25. What is the highest level of education obtained by your:

	Father	Mother
a. Not a high school graduate	<input type="radio"/>	<input type="radio"/>
b. High school diploma or GED	<input type="radio"/>	<input type="radio"/>
c. Vocational or trade school	<input type="radio"/>	<input type="radio"/>
d. Some college, did not complete a degree	<input type="radio"/>	<input type="radio"/>
e. Associate's degree	<input type="radio"/>	<input type="radio"/>
f. Bachelor's degree	<input type="radio"/>	<input type="radio"/>
g. Master's degree/1st professional	<input type="radio"/>	<input type="radio"/>
h. Doctorate degree	<input type="radio"/>	<input type="radio"/>
i. Unknown	<input type="radio"/>	<input type="radio"/>

Describe your most positive experiences AT THIS INSTITUTION.

---

---

---

Describe your most negative experiences AT THIS INSTITUTION.

---

---

---

Thank you for sharing your views.

Your responses will remain confidential and individual response will not be reported.





## References

- Adelman, C. (1999). *Answers in the tool box: Academic intensity, attendance patterns, and bachelor's degree attainment*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.
- Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college*. Washington, DC: U.S. Department of Education.
- Astin, A. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25, 297-308.
- Astin, A. (1997). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass.
- Attewell, P., Lavin, D., Domina, T., & Levey, T. (2006). New evidence of college remediation. *The Journal of Higher Education*, 77(5), 886-924.
- Attinasi, L. (1989). Getting in: Mexican American's perceptions of university attendance and the implications for freshman year persistence. *The Journal of Higher Education*, 60, 247-277.
- Bailey, T. R. (2005). *Struggling to achieve: Outcomes for low-income and minority students at community colleges*: Columbia University, Teachers College, Community College Research Center.
- Bailey, T. R., & Alfonso, M. (2005). *Paths to persistence: An analysis of research on program effectiveness at community colleges*. New York: Columbia University, Teachers College, Community College Research Center.
- Bailey, T., Alfonso, M., Calcagno, J. C., Jenkins, D., Kienzel, G., & Leinbach, T. (2004). *Improving student attainment in community colleges: Institutional characteristics and*

- policies*. New York: Columbia University, Teachers College, Community College Research Center.
- Bailey, T., Calcagno, J. C., Jenkins, D., Kienzel, G., & Leinbach, T. (2005). *Community college student success: What institutional characteristics make a difference*. New York: Columbia University, Teachers College, Community College Research Center.
- Bailey, T., Jenkins, D., & Leinbach, T. (2005). *Community college low-income and minority student completion study: Descriptive statistics from the 1992 high school cohort*. New York: Columbia University, Teachers College, Community College Research Center.
- Bailey, T. R., Leinbach, D. T., & Jenkins, D. (2006). *Is student success labeled institutional failure? Student goals and graduation rates in the accountability debate at community colleges*: Columbia University, Teachers College, Community College Research Center.
- Barr, R. B., & Tagg, J. (1995). From teaching to learning. *Change*, 27(6), 13-25.
- Baum, S., & Ma, J. (2007). *Education pays: The benefits of higher education for individuals and society*. Washington, D.C.: College Board.
- Beal, P. E., & Noel, L. (1980). *What works in student retention*. Iowa City, IA: American College Testing Program and the National Center for Higher Education Management Systems.
- Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research*, 55, 485-540.
- Bellini, J., & Rumrill, P. (1999). Perspectives on scientific inquiry: validity in rehabilitation research. *Journal of Vocational Rehabilitation*, 13, 131-138.

- Berker, A., Horn, L., & Carroll, C. D. (2003). *Work first, student second: Adult undergraduates who combine employment and postsecondary enrollment (NCES 2003-167)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Berkner, L., He, S., & Cataldi, E. (2002). *Descriptive summary of 1995-96 beginning postsecondary students: Six years later (NCES 2003-151)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Berkner, L., Horn, L., Clune, M., & Carroll, C. D. (2000). *Descriptive summary of 1995-96 beginning postsecondary students: Three years later (NCES 2000-154)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Bers, T. H., & Smith, K. E. (1991). Persistence of community college students: the influence of student intent and academic and social integration. *Research in Higher Education*, 32, 539-556.
- Bettinger, E. P. & Long, B. T. (2005). Remediation at the community college: Student participation and outcomes. In C. A. Kozieracki (Ed.), *Responding to the challenges of developmental education: New directions for community colleges* (pp. 17-26). San Francisco: Jossey-Bass.
- BHEP. (2007). *From college access to college success*. Boston, MA: Boston Higher Education Partnership.
- Bloom, D., & Sommo, C. (2005). *Building learning communities: Early results from the Open Doors demonstration at Kingsborough Community College*. New York: Manpower Demonstration Research Corporation (MRDC).
- Bourdieu, P., & Passerson, J. 1997. *Reproduction in education, society, and culture*. London: Sage.

- Boylan, H. R. (1995). Making the case for developmental education. *Research in Developmental Education, 12*(2), 1-4.
- Boylan, H. R., Bonham, B. S., & Rodriguez, L. M. (2000). What are remedial courses and do they work: Results of national and local studies. *The Learning Assistance Review, 5*(1), 5-14.
- Bradburn, N., & Sudman, S. (1988). *Polls and surveys: Understanding what they tell us*. San Francisco: Jossey-Bass.
- Braxton, J. M., Milem, J. F., & Sullivan, A. S. (2000). The influence of active learning on the college student departure process: Toward a revision of Tinto's theory. *The Journal of Higher Education, 71*(5), 569-590.
- Breneman, D., & Haarlow, W. (1998). Remedial education: Costs and consequences. *Fordham Report, 2*(9), 1-22.
- Brooks-Leonard, C. (1991). Demographic and academic factors associated with first-to-second-term retention in a two-year college. *Community/Junior College Quarterly, 15*, 57-69.
- Brown, C. S. (1981). *Alexander Meiklejohn: Teacher of freedom*. Berkley: Meiklejohn Civil Liberties Institute.
- Cabrera, A., La Nasa, S. M., & Burkum, K. R. (2001). *On the right path: The higher education story of one generation*. University Park, PA: Center for the Study of Higher Education, Pennsylvania State University.
- Cabrera, A. F. (1994). Logistic regression analysis in higher education: An applied perspective. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 10, pp. 225-256). New York: Agathon Press.

- Cabrera, A. F., Colbeck, C. L., & Terenzini, P. T. (2001). Developing performance indicators for assessing classroom teaching practices and student learning: The case of engineering. *Research in Higher Education, 42*(3), 327-352.
- Cabrera, A. F., Crissman, J. L., Bernal, E. M., Nora, A., Terenzini, P. T., & Pascarella, E. T. (2002). Collaborative learning: Its impact on college students' development and diversity. *Journal of College Student Development, 43*(1), 20-34.
- Cabrera, A. F., & La Nasa, S. M. (2002). *Classroom teaching practices: Ten lessons learned*. Paper presented at the Calidad e Innovacion en el Sistema Universitario.
- Cabrera, A. F., La Nasa, S. M., & Burkum, K. R. (2001). *Pathways to a four-year degree: The higher education story for one generation (No. 00-107)*: Association for Institutional Research.
- Cabrera, A. F., Nora, A., Terenzini, P. T., Pascarella, E., & Hagedorn, L. S. (1999). Campus racial climate and the adjustment of students to college: A comparison between white students and African-American students. *The Journal of Higher Education, 70*(2), 134-160.
- Cabrera, A. F., Nora, A., Bernal, E., Terenzini, P., & Pascarella, P. (1998). *Collaborative learning: Preferences, gains in cognitive and affective outcomes, and openness to diversity among college students*. Paper presented at the 1998 Annual Meeting of the Association for the Study of Higher Education.
- Cabrera, A. F., Nora, A., & Castaneda, M. (1992). The role of finances in the persistence process: A structural model. *Research in Higher Education, 33*(5), 571-593.

- Cabrera, A. F., Nora, A., & Castaneda, M. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. *Journal of Higher Education*, 64, 123-139,
- Cabrera, A. F., Stampen, J. O., & Hansen, W. L. (1990). Exploring the effects of ability to pay on persistence in college. *Review of Higher Education*, 13(3), 303-336.
- Calcagno, J. C., & Long, B. T. (2008). *The impact of postsecondary remediation using a regression discontinuity approach: Addressing endogenous sorting and noncompliance*. Cambridge, MA: National Bureau of Economic Research.
- Carroll, C. D. (1989). *College persistence and degree attainment for 1980 high school graduates: Hazards for transfers, stopouts, and part-timers (NCES 89-302)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Cassaza, M. E. (1999). Who are we and where did we come from? *Journal of Developmental Education*, 3(1), 2-3, 13.
- CCSSE. (2002). *Engaging community colleges: A First look*. Austin, TX: Community College Survey of Student Engagement.
- CCSSE. (2009a). *2009 institutional report: Benchmarks of effective educational practice*. Austin, Texas: Community College Survey of Student Engagement.
- CCSSE. (2009b). *Making connections: Dimensions of student engagement*. Austin, TX: Community College Survey of Student Engagement.
- CCSSE. (2010, April 13). Retrieved from <http://www.ccsse.org/>.
- Chen, X., & Carroll, C. D. (2005). *First-generation students in postsecondary education: A look at their transcripts (NCES 2005-171)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

- Chen, X., & Carroll, C. D. (2007). *Part-time undergraduates in postsecondary education: 2003-04 (NCES 2007-165)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Choy, S. P. (2001). *Students whose parents did not go to college (NCES 2001-126)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Choy, S. P., & Bobbitt, L. (2000). *Low-income students: Who they are and how they pay for their education (NCES 2000-169)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Clowes, D. A. (1980). More than a definitional problem: Remedial, compensatory, and developmental education. *Journal of Developmental & Remedial Education*, 4(1), 8-10.
- Cofer, J., & Somers, P. (2001). What influences student persistence at two-year colleges? *Community College Review*, 29(3), 56-77.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159
- Cohen, A. M., & Brawer, F. B. (1996). *The American community college*. San Francisco: Jossey-Bass.
- Community College Research Center, Achieving the Dream: Community Colleges Count. (2011). Field Guide for Improving Student Success. Retrieved from [http://www.achievingthedream.org/docs/Field\\_Guide\\_for\\_Improving\\_Student\\_Success.pdf](http://www.achievingthedream.org/docs/Field_Guide_for_Improving_Student_Success.pdf)
- Converse, J., & Presser, S. (1986). *Survey questions: Handcrafting the standardized questionnaire*. Newbury Park, CA: Sage.
- Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four



- recommendations for getting the most from your analysis. *Practical Assessment, Research and Evaluation*, 10(7), 1-9.
- Crenshaw, K. (2002). The first decade: Critical reflections, or 'a foot in the closing door.' In F. Valdes, J. McCristal Culp, & A. Harris (Eds.), *Crossroads, directions, and new critical race theory* (pp. 9-31). Philadelphia: Temple University Press.
- Crenshaw, K., Gotanda, N., Peller, G., & Thomas, K. (Eds.). *Critical race theory: The key writings that formed the movement*. New York: New Press.
- Cronon, D. E., & Jenkins, J. W. (1994). *The University of Wisconsin: A history 1925-1945* (Vol. 3). Madison: University of Wisconsin Press.
- Cross, K. P. (1971). *Beyond the open doors*. San Francisco: Jossey-Bass.
- Cross, K. P. (1998). Why learning communities? Why now? *About Campus*, 3(3), 4-11.
- Delgado, R. (1989). Storytelling for oppositionists and others: A plea for narrative. *Michigan Law Review*, 87, 2411-2441.
- Delgado Bernal, D. (2002). Learning and living: Pedagogies of the home. *International Journal of Qualitative Studies in Education*, 14(5), 623-639.
- DeNisi, A. S., & Shaw, J. B. (1977). Investigation of the uses of self-reports and abilities. *Journal of Applied Psychology*, 62, 641-644.
- Dey, E. (1991). *Statistical alternatives for studying student retention: a comparative analysis of lgit, probit and linear regression*. Paper presented at the American Educational Research Association.
- Dixon, R. A. (1993, March). *Improved reading comprehension: A key to university retention?* Paper preseted at the Sixth Annual Midwest Regional Reading and Study Skills Conference, Kansas City, MO.

- Dougherty, K. J., & Reid, M. (2007). *Fifty states of achieving the dream: State policies to enhance access to and success in community colleges across the United States*. New York: Columbia University, Teachers College, Community College Research Center.
- Ducher, J., Mino, J., & Sing, R. (1999). How long is the coast of Holyoke Community College? In J. T. MacGregor (Ed.), *National Learning Communities Dissemination Project, Strengthening learning communities: Case studies from the National Learning Communities Dissemination Project (FIPSE)* (pp. 33-42). Olympia, WA: Washington Center for Improving the Quality of Undergraduate Education, Evergreen State College.
- Dzubak, C. M. (2005). What skills and whose standards: Why are students underprepared? *Synergy Online Journal of the Association for the Tutoring Profession*. Retrieved from <http://www.myatp.org/ejournal.htm>.
- Engstrom, C. (2008). Curricular learning communities and underprepared students: How faculty can provide a foundation for success. In J. M. Braxton (Ed.), *New directions for teaching and learning: The role of the classroom in college student persistence* (pp. 5-19). San Francisco: Jossey-Bass.
- Engstrom, C., & Tinto, V. (2007). Pathways to student success: The impact of learning communities on the success of academically underprepared college students. Final Report Prepared for the William and Flora Hewlett Foundation. Retrieved from <http://www.hewlett.org/uploads/files/PathwaystoStudentSuccess.pdf>.
- Engstrom, C., & Tinto, V. (2008). Access without support is not opportunity. *Change, January/February*, 46-50.
- Ewell, P. T. (1984). *Conducting student retention studies*. Boulder, CO: National Center for Higher Education Management Systems and the College Board.

- Fike, D. S., & Fike, R. (2008). Predictors of first-year student retention in community colleges. *Community College Review, 36*, 68-88.
- Fleischauer, J. P. (1996). Assessing developmental reading courses: Do they have an impact? *Research and Teaching in Developmental Education, 12*(2), 17-24
- Fogarty, J., Dunlap, L., Dolan, E., Hesse, M., Mason, M., & Mott, J. (2003). *Learning communities in community colleges*. Olympia, WA: The Evergreen State College, Washington Center for Improving the Quality of Undergraduate Education.
- Fralick, M. A. (1993). College success: A study of positive and negative attrition. *Community College Review, 20*, 29-36.
- Freeman, C. E. (2004). *Trends in educational equity of girls and women: 2004 (NCES 2005-016)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Gablenick, F., MacGregor, J., Matthews, R., & Smith, B. (1990). Learning community foundations. *New Directions for Teaching and Learning* (Vol. 41, pp. 5-18).
- Gamson, Z. F. (1994). Collaborative learning comes of age. In S. K. J. A. Keehner (Ed.), *Collaborative Learning: A Sourcebook for Higher Education* (Vol. 2). University Park: The Pennsylvania State University: National Center for Postsecondary Teaching, Learning, and Assessment.
- Gardiner, L. F. (1998). Why we must change: The research evidence. *The NEA Higher Education Journal, 14*(1), 71-88.
- Gloria, A. M., Robinson Kurpius, S. E., Hamilton, K. D., & Wilson, M. S.. (1999). African American students' persistence at a predominantly White university: Influences of social

- support, university comfort, and self-beliefs. *Journal of College Student Development*, 40(3), 257-268.
- Goan, S. K., & Cunningham, A. F. (2006). The investment payoff: A 50-state analysis of the public and private benefits of higher education. *American Academic*, 2, 23-24.
- Goodsell-Love, A., & Tokuno, K. A. (1999). Learning community models. In J. H. Levine (Ed.), *Learning Communities: New Structures, New Partnerships for Learning* (pp. 9-18). Columbia, SC: University of South Carolina, National Resource Center for the First-Year Experience and Students in Transition.
- Gordon, C., Hartigan, P., & Muttalib, N. (1996, November 22). Developmental learning at four-year colleges [Letter to the editor]. *The Chronicle of Higher Education*, p. B11.
- Gross, J. K., Hossler, D., & Ziskin, M. (2007). Institutional aid and student persistence: An analysis of the effects of institutional financial aid at public four-year institution. *Journal of Student Financial Aid*, 37(1), 28-39.
- Grubb, W. N. (1999). *Honored but invisible: An inside look at teaching at community colleges*. New York: Routledge.
- Grubb, W. N. (2001). *From black box to pandora's box: Evaluating remedial/developmental education*. New York: Columbia University, Teachers College, Community College Research Center.
- Guiffrida, D. A. (2004). Friends from home: Asset and liability to African American students attending a predominantly White institution. *NASPA Journal*, 24(3), 693-708.
- Guiffrida, D. A. (2005). To break away or strengthen ties to home: A complex question for African American student attending a predominantly White institution. *Equity and Excellence in Education*, 38(1), 49-60.

- Guiffrida, D. A. (2006). Toward a cultural advancement of Tinto's theory. *The Review of Higher Education, 29*, 451-472.
- Hagedorn, L. S., Maxwell, W., Hampton, P. (2002). Correlates of retention for African-American males in community colleges. *Journal of College Student Retention, 3*, 242-263.
- Hall, J. M. & Ponton, M. K. (2005). Mathematics self-efficacy of college freshmen. *Journal of Developmental Education, 28*, 26-30.
- Hansford, B. C., & Hattie, J. A. (1982). The relationship between self and achievement/performance measurers. *Review of Educational Research, 52*, 123-142.
- Harper, S. R. (2009) Race-conscious student engagement practices and the equitable distribution of enriching educational experiences. *Liberal Education, 5*(4), 38-45.
- Hawkins, V. M., & Larabee, H. J. (2009). Engaging racial/ethnic minority students in out-of-class activities on predominantly white campuses. In S. Harper and S. J. Quaye (Eds.), *Student Engagement in Higher Education: Theoretical Perspectives and Practical Approaches for Diverse Populations* (pp. 179-188). New York, NY: Taylor & Francis.
- Hendricks, A. D., Smith, K., Caplow, J. H., & Donaldson, J. H. (1996). A grounded theory approach to determining the factors related to the persistence of minority students in professional programs. *Innovative Higher Education, 21*(2), 113-126.
- Hoachlander, G., Sikora, A. C., Horn, L., & Carroll, C. D. (2003). *Community college students: Goals, academic preparation, and outcomes (NCES 2003-164)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Horn, L., Nunez, A., & Bobbitt, L. (2000). *Mapping the road to college: First-generation students' math track, planning strategies, and context of support (NCES 2000-152)*.

Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

Huck, S. W. (2000). *Reading statistics and research*. New York: Addison Wesley Longman.

Hurtado, S., Carter, P. F, & Spuler, A. (1996). Latino students transition to college: Assessing difficulties and factors in successful college adjustment. *Research in Education* 37(2): 135-158.

Hussar, W. J. (2005). *Projections of education statistics to 2014 (NCES 2005-074)*. Washington, D.C.: U.S. Department of Education, National Center of Education Statistics.

Jackson-Evans, P., & Van Middlesworth, C. (1999). Metropolitan Community Colleges learning communities case study: Ride on John Dewey. In J. T. MacGregor (Ed.), *National Learning Communities Dissemination Project, Strengthening learning communities: Case studies form the National Learning Communities Dissemination Project (FIPSE)*(pp. 51-62). Olympia, WA: Washington Center for Improving the Quality of Undergraduate Education, Evergreen State College.

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement*, 20, 141-151.

Kelly, P. J. (2005). *As america becomes more diverse: The impact of state higher education inequality*. Boulder, CO: National Center for Higher Education Management.

Keup, J. (2005). The impact of curricular interventions on intended second year re-enrollment. *Journal of College Student Retention*, 7(1-2), 61-89.

Kraemer, B. A. (1997). The academic and social integration of Hispanic students into college. *Review of Higher Education*, 20, 163-179.

- Kuh, G. D. (2001). Assessing what really matters to student learning: Inside the National Survey of Student Engagement. *Change*, 33(3), 10-17, 66.
- Kuh, G. D. (2003a). *The National Survey of Student Engagement: Conceptual framework and overview of psychometric properties*. Bloomington: Indiana University, National Survey of Student Engagement.
- Kuh, G. D. (2003b). What we're learning about student engagement from NSSE: Benchmarks for effective educational practice. *Change*, 35(2), 24-32.
- Kuh, G. D. (2009). High-impact educational practices: What they are, how to access them, and why they matter. Washington, DC: Association of American Colleges and Universities.
- Kuh, G. D., Cruce, T. M., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *The Journal of Higher Education*, 79(5), 540-563.
- Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006). *What matters to student success: A review of the literature: National Postsecondary Education Cooperative*.
- Kuh, G. D., Kinzie, J., Cruce, T., Shoup, R., & Gonyea, R. M. (2007). *Connecting the dots: Multi-faceted analyses of the relationship between student engagement results from NSSE, and the institutional practices and conditions that foster student success*. Bloomington, IN: Center for Postsecondary Research.
- Kuh, G. D. & Love, P. G. (2000). A cultural perspective on student departure. In J. M. Braxton (Ed.) *Reworking the student departure puzzle* (pp. 196-212). Nashville, Vanderbilt University Press.

- Laing, J., Sayer, R., & Noble, J. (1989). The accuracy of self-reported activities and accomplishments of college-bound seniors. *Journal of College Student Development*, 29(362-368).
- Lanni, J. S. (1997). *Modeling student outcomes: A longitudinal study*. Paper presented at the 37<sup>th</sup> Annual Forum of the Association of Institutional Research, Orlando, FL. (ERIC Document reproduction Service No. ED 410670).
- Lenning, O. T., & Ebbers, L. H. (1999). The powerful potential of learning communities: Improving education for the future *ASHE-ERIC Higher Education Report* (Vol. 26). Washington, D.C.: The George Washington University, Graduate School of Education and Human Development.
- Levin, H. M., & Calcagno, J. C. (2007). *Remediation in the community college: An evaluator's perspective*. New York: Columbia University, Teachers College, Community College Research Center.
- Levin, H. M., & Calcagno, J. C. (2008). Remediation in the community college. *Community College Review*, 35(3), 181-207.
- Lewis, L., Farris, E., & Greene, B. (1996). *Remedial education at higher education institutions in fall 2005 (NCES 97-584)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Liang, C. T. H., & Sedlacek, W. E. (2003). Utilizing factor analysis to understand the needs of Asian American students. *Journal of College Student Development*, 44(2), 264-266.
- Lohfink, M. M., & Paulsen, M. B. (2005). Comparing the determinants of persistence for first-generation and continuing-generation students. *Journal of College Student Development*, 46(4), 409-428.



- Long, B. T., & Bettinger, E. P. (2005). Remediation at the community college: Student participation and outcomes. In C. A. Kozeracki (Ed.), *Responding to the challenges of developmental education: New directions for community colleges* (Vol. 129, pp. 17-26). Wilmington, DE: Wiley Periodicals.
- Lowman, R. L., & Williams, R. E. (1987). The validity of self-ratings of abilities and competencies. *Journal of Vocational Behavior*, *31*, 1-13.
- Luvás-Briggs, K. (1984). Integrating basic skills with college content instruction. *Journal of Developmental Education*, *7*(2), 6-9.
- MacGregor, J. (1991). What differences do learning communities make? *Washington Center News*, *6*(1), 4-9.
- MacGregor, J. T. (1999). *Strengthening learning communities: Case studies from the national learning communities dissemination project (FIPSE)*. Olympia, WA: Evergreen State College.
- Malnarich, G. (2003). *The pedagogy of possibilities: Developmental education, college-level studies, and learning communities*. Olympia, WA: The Evergreen State College, Washington Center for Improving the Quality of Undergraduate Education.
- Manski, C. F., & Wise, D. A. (1983). *College choice in America*. Cambridge, MA: Harvard University Press.
- Marti, C. N. (2010, January 3). *Dimensions of student engagement in American community colleges: Using the community college student report in research and practice*. Unpublished manuscript, Austin, Texas.
- Marti, C. N. (2010, January 5). *Overview of the CCSSE instrument and psychometric properties*. Unpublished manuscript, Austin, Texas.

- McCabe, R. (2000). *No one to waste*. Washington, D.C.: Community College Press.
- McClenney, K., & Marti, C. N. (2006). *Exploring the relationship between student engagement and student outcomes in community colleges: Report on validation research*. Austin: University of Texas at Austin, Community College Leadership Program, Community College Survey of Student Engagement.
- McClenney, K. M. (2007). The Community College Survey of Student Engagement. *Community College Review*, 35(2), 137-146.
- McIntosh, M. F., & Rouse, C. E. (2009). *The other college: Retention and completion rates among two-year college students*. Washington, D.C.: Center for American Progress.
- Metz, G. W. (2004-2005). Challenge and changes to Tinto's persistence theory: A historical review. *Journal of College Student Retention*, 6, 191-207.
- Mott, J., Bums, C., Chapman, H., Phillips, J., & Staub, C. (1999). Get connected at William Rainey Harper College: Legitimizing learning communities. In J. T. MacGregor (Ed.), *National Learning Communities Dissemination Project, Strengthening learning communities: Case studies from the National Learning Communities Dissemination Project (FIPSE)* (pp. 63-74). Olympia, WA: Washington Center for Improving the Quality of Undergraduate Education, Evergreen State College.
- Murdock, T. A. (1990). Financial aid and persistence: An integrative review of the literature. *NASPA Journal*, 27(3), 213-221.
- NCPPHE. (2004). *Policy Alert*. San Jose, CA: National Center for Public Policy and Higher Education.
- Nora, A. (1987). Determinants of retention among Chicano college students: A structural model. *Research in Higher Education*, 26(1), 31-59.

- Nora, A. (2001-2002). The depiction of significant others in Tinto's 'rites of passage': A reconceptualization of the influence of family and community in the persistence process. *Journal of College Student Retention, 31*, 41-56.
- Nora, A., Cabrera, A. et al. (1996). Differential impacts of academic and social experiences on college-related behavioral outcomes versus different ethnic and gender groups at four-year institutions. *Research in Higher Education, 37*, 427-452.
- Nunez, A., Cuccaro-Alamin, S., & Carroll, C. D. (1998). *First-generation students: Undergraduates whose parents never enrolled in postsecondary education (NCES 98-082)*. Washington, D.C.: U.S. Department of Education, National Center of Education Statistics.
- O'Toole, D. M., Stratton, L. S., & Wetzel, J. N. (2003). A longitudinal analysis of the frequency of part-time enrollment and the persistence of students who enrolled part-time. *Research in Higher Education, 44*(5), 519-537.
- Pace, C. R. (1985). *The credibility of student self-reports*. Los Angeles: University of California, Graduate School of Education, Center for the Study of Evaluation.
- Parsad, B., & Lewis, L. (2003). *Remedial education at degree-granting postsecondary institutions in fall 2000 (NCES 2004-010)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Pascarella, E.T., & Chapman, D.W. (1983). A multiinstitutional, path analytic validation of Tinto's model of college withdrawal. *American Educational Research Journal, 20*(1), 87-102.

- Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First generation college students: Additional evidence on college experiences and outcomes. *The Journal of Higher Education*, 75(3), 249-284.
- Pascarella, E.T., & Terenzini, P.T. (1983). Predicting voluntary freshman year persistence/withdrawal behavior in a residential university: A path analytic validation of Tinto's model. *Journal of Educational Psychology*, 75(2), 215-226.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college effects students: A third decade of research*. San Francisco: Jossey-Bass.
- Pascarella, E. T., Wolniak, G. C., Pierson, C. T., & Terenzini, P. T. (2003). Experiences and outcomes of first-generation students in community colleges. *Journal of College Student Development*, 44(3).
- Peter, K., Horn, L., & Carroll, C. D. (2005). *Gender differences in participation and completion of undergraduate education and how they have changed over time (NCES 2005-169)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Phipps, R. (1998). *College remediation: What it is, what it costs, what's at stake*. Washington, DC: Institute for Higher Education Policy.
- Phohlmann, J. T. (2004). Use and interpretation of factor analysis in "The Journal of Educational Research": 1992-2002. *The Journal of Educational Research*, 98(1), 14-22.
- Pike, G. R. (1995). The relationship between self reports of college experiences and achievement test scores. *Research in Higher Education*, 36, 1-22.

- Pike, G. R., & Kuh, G. D. (2005). First- and second generation college students: A comparison of their engagement and intellectual development. *The Journal of Higher Education*, 76(3), 276-300.
- Pike, G. R., Schroeder, C. C., & Barry, T. R. (1997). Enhancing the educational impact of residence halls: The relationship between residential learning communities and first-year college experiences and persistence. *Journal of College Student Development*, 38(6), 609-621.
- Planty, M., Provasnik, S., Hussar, W., & Snyder, T. (2007). *The condition of education 2007 (NCES 2007-064)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Porter, O. F. (1991). Where do we go from here: Looking beyond student aid and access to persistence. *New Directions for Higher Education*, 29(2), 75-90.
- Powell, J. W. (1981). *The experimental college*. Cabin John, MD: Seven Locks Press.
- Provasnik, S., & Planty, M. (2008). *Community colleges: Special supplement to The Condition of Education 2008 (NCES 2008-033)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Ramani, A. K., Gilbertson, L., Fox, M. A., & Provasnik, S. (2007). *Status and trends in the education of racial and ethnic minorities (NCES 2007-039)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Reason, R.D. (2009). An examination of persistence research through the lens of a comprehensive conceptual framework. *Journal of College Student Development*, 50(6), 659-682.

- Rendon, L. I. (1994). Validating culturally diverse students: toward a new model of learning and student development. *Innovative Higher Education*, 19(1), 33-51.
- Rendon, L. I., Jalomo, R. E., & Nora, A. (2000). Theoretical considerations in the study of minority student retention in higher education. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 127-156). Nashville, TN: Vanderbilt University Press.
- Richardson, R. C., & Skinner, E. F. (1992). Helping first-generation minority students achieve degrees. In L. S. Z. a. H. B. London (Ed.), *First-generation students: Confronting the cultural issues* (Vol. 80, pp. 29-43). San Francisco: Jossey-Bass.
- Rings, S., Shovers, B., Skinner, E. F., & Siefer, N. (1999). Learning communities in the Maricopa Community Colleges: A faculty-driven initiative moving towards district impact. In J. T. MacGregor (Ed.), *National Learning Communities Dissemination Project, Strengthening learning communities: Case studies from the National Learning Communities Dissemination Project (FIPSE)* (pp. 43-50). Olympia, WA: Washington Center for Improving the Quality of Undergraduate Education, Evergreen State College.
- Rooney, P., Hussar, W. P., M., Choy, S., Hampden-Thompson, G., Provasnik, S., & Fox, M. A. (2006). *The condition of education 2006 (NCES 2006-071)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Rosas, M. & Hamrick, F. A. (2002). Postsecondary enrollment and academic decision making: Family influences on women college student of Mexican decent. *Equity and Excellence in Education*, 35(1), 59-69.
- Roueche, J. E., & Roueche, S. D. (1999). *High stakes, high performance: Making remedial education work*. Washington, DC: Community College Press. (ERIC Document ReproductionService No. ED454939)

- Rutschow, E. Z., Richburg-Hayes, L., Brock, T., Orr, G., Cerna, O., Cullinan, D., Kerrigan, M. R., Jenkins, D., Gooden, S., & Martin, K. (2011). *Turning the tide: Five years of Achieving the Dream in community colleges*. New York: Columbia University, Teachers College, Community College Research Center.
- Sedlacek, W. E. (1993). Applying non-cognitive variables in the admissions and retention in higher education. In *Achieving diversity: Issues in the recruitment and retention of underrepresented racial/ethnic students in higher education* (pp. 33-39). Alexandria, VA: National Association of College Admission Counselors.
- Shapiro, N. S., & Levine, J. H. (1999). *Creating learning communities: A practical guide to winning support, organizing for change, and implementing programs*. San Francisco: Jossey-Bass.
- Smith, B. L. (1991). Taking structure seriously: The learning community model. *Liberal Education*, 77(2), 42-49.
- Smith, B. L. (2001). The challenge of learning communities as a growing national movement. *Peer Review*, 3(4), 4-8.
- Smith, B. L. (2003). Learning communities and liberal education. *Academe*, 89(1), 14-18.
- Smith, B. L., MacGregor, J., Matthews, R. S., & Gabelnick, F. (1997). *Learning community models*. Paper presented at the Annual Meeting of the American Association of Higher Education.
- Smith, B. L., MacGregor, J., Matthews, R. S., & Gabelnick, F. (2004). *Learning communities: Reforming undergraduate education*. San Francisco: Jossey-Bass.
- Smith, B. L., & MacGregor, J. T. (1992). What is collaborative learning? In A. M. M. A. S. Goodsell, & V. Tinto (Ed.), *Collaborative Learning: A Sourcebook for Higher Education*

- (Vol. 1, pp. 9-22). University Park: The Pennsylvania State University, National Center for Postsecondary Teaching, Learning, and Assessment.
- Snyder, T. D., Dillow, S. A., & Hoffman, C. M. (2009). *Digest of education statistics 2009 (NCES 2009-020)*. Washington, D.C.: U.S. Department of Education, National Center for Educationa Statistics.
- Solorzano, D. (1997). Images and words that wound: Critical race theory, racial stereotyping and teacher education. *Teacher Education Quarterly*, 24, 5-19.
- Solorzano, D. (1998). Critical race theory, racial and gender microaggressions, and the experiences of Chicana and Chicano scholars. *International Journal of Qualitative Studies in Education*, 11, 121-136.
- St. John, E. P. (1990a). Price response in enrollment decisions: An analysis of the High School and Beyond Senior Cohort. *Research in Higher Education*, 31(2), 161-176.
- St. John, E. P. (1990b). Price response in persistence decisions: An analysis of the High School and Beyond Senior Cohort. *Research in Higher Education*, 31(4), 387-403.
- St. John, E. P. (2002). *The access challenge: Retinking the causes of the new inequality* (Policy Report). Bloomington, IN: Indiana University, Educational Policy Center/
- St. John, E. P., Hu, S., & Tuttle, T. (2000). Persistence by undergraduates in an urban public university: Understanding the effects of financial aid. *Journal of Student Financial Aid*, 30(2), 23-37.
- St. John, E. P., Hu, S., & Weber, J. (2000). Keeping public colleges affordable: A study of persistence in Indiana's public colleges and universities. *Journal of Student Financial Aid*, 30(1), 21-32.



- St. John, E. P., Kirshstein, J. R., & Noell, J. (1991). The effect of financial aid on persistence: A sequential analysis. *Research in Higher Education, 14*(3), 383-406.
- St. John, E. P., Musoba, G. D., & Chung, C. (2004). *Academic preparation and college success: Analyses of Indiana's 2000 high school class (IPAS Research Report #04-03)*.  
Bloomington, IN: Indiana Project on Academic Success.
- St. John, E. P., & Noell, J. (1989). The effects of student aid on access to higher education: An analysis of progress with special consideration of minority enrollment. *Research in Higher Education, 30*(6), 563-581.
- Stage, F.K. (1989a). Motivation, academic and social integration, and the early dropout. *American Educational Research Journal, 26*(3), 385-402.
- Stage, F.K. (1989b). Reciprocal effects between the academic and social integration of college students. *Research in Higher Education, 30*(5), 517-530.
- Stampen, J. O., & Cabrera, A. F. (1986). Exploring the effects of student aid on attrition. *Journal of Student Financial Aid, 16*(2), 28-40.
- Stampen, J. O., & Cabrera, A. F. (1988). The targeting and packaging of student aid and its effect on attrition. *Economics of Education Review, 7*(1), 29-46.
- StateUniversity.com. (2010a, April 19). Camden Community College. Retrieved from [http://www.stateuniversity.com/universities/NJ/Camden\\_County\\_College.html](http://www.stateuniversity.com/universities/NJ/Camden_County_College.html)
- StateUniversity.com. (2010b, April 19). Cerritos Community College. Retrieved from [http://www.stateuniversity.com/universities/CA/Cerritos\\_College.html](http://www.stateuniversity.com/universities/CA/Cerritos_College.html)
- StateUniversity.com. (2010c, April 19). The Community College of Baltimore County.  
Retrieved from

[http://www.stateuniversity.com/universities/MD/The\\_Community\\_College\\_of\\_Baltimore\\_County.html](http://www.stateuniversity.com/universities/MD/The_Community_College_of_Baltimore_County.html)

StateUniversity.com. (2010d, April 19). DeAnza Community College. Retrieved from

[http://www.stateuniversity.com/universities/CA/De\\_Anza\\_College.html](http://www.stateuniversity.com/universities/CA/De_Anza_College.html)

StateUniversity.com. (2010e, April 19). Grossmont Community College. Retrieved from

[http://www.stateuniversity.com/universities/CA/Grossmont\\_College.html](http://www.stateuniversity.com/universities/CA/Grossmont_College.html)

StateUniversity.com. (2010f, April 19). Holyoke Community College. Retrieved from

[http://www.stateuniversity.com/universities/MA/Holyoke\\_Community\\_College.html](http://www.stateuniversity.com/universities/MA/Holyoke_Community_College.html)

StateUniversity.com. (2010g, April 19). LaGuardia Community College. Retrieved from

[http://www.stateuniversity.com/universities/NY/City\\_University\\_of\\_New\\_York\\_La\\_Guardia\\_Community\\_College.html](http://www.stateuniversity.com/universities/NY/City_University_of_New_York_La_Guardia_Community_College.html)

StateUniversity.com. (2010h, April 19). San Jose City College. Retrieved from

[http://www.stateuniversity.com/universities/CA/San\\_Jose\\_City\\_College.html](http://www.stateuniversity.com/universities/CA/San_Jose_City_College.html)

StateUniversity.com. (2010i, April 19). Sandhills Community College. Retrieved from

[http://www.stateuniversity.com/universities/NC/Sandhills\\_Community\\_College.html](http://www.stateuniversity.com/universities/NC/Sandhills_Community_College.html)

StateUniversity.com. (2010j, April 19). Santa Fe Community College. Retrieved from

[http://www.stateuniversity.com/universities/FL/Santa\\_Fe\\_Community\\_College.html](http://www.stateuniversity.com/universities/FL/Santa_Fe_Community_College.html)

StateUniversity.com. (2010k, April 19). Seattle Central Community College. Retrieved from

[http://www.stateuniversity.com/universities/WA/Seattle\\_Community\\_College\\_Central.html](http://www.stateuniversity.com/universities/WA/Seattle_Community_College_Central.html)

StateUniversity.com. (2010l, April 19). Shoreline Community College. Retrieved from

[http://www.stateuniversity.com/universities/WA/Shoreline\\_Community\\_College.html](http://www.stateuniversity.com/universities/WA/Shoreline_Community_College.html)

- StateUniversity.com. (2010m, April 19). Spokane Falls Community College. Retrieved from [http://www.stateuniversity.com/universities/WA/Spokane\\_Falls\\_Community\\_College.html](http://www.stateuniversity.com/universities/WA/Spokane_Falls_Community_College.html)
- Sternberg, R. J. (1985). *Beyond IQ*. London: Cambridge University Press.
- Sternberg, R. J. (1986). What would be better intelligence tests looks like? In *Measures in the college admissions process* (pp. 146-150). New York: The College Entrance Examination Board.
- Stoutland, S. E., & Coles, A. S. (2009). *Who's making it: The academic achievement of resent Boston Public School graduates in the early college years*. Boston, MA: Boston Higher Education Partnership.
- Swail, W. S. (2003). *Retaining minority students in higher education: A framework for success*. ASHE-ERIC Higher Education Report No 2. Washington, DC: The George Washington University, School of Education and Human Development.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston, MA: Allyn and Bacon.
- Tacq, J. (1997). *Multivariate analysis techniques in social science research*. London: Sage Publications.
- Terenzini, P. T., Cabrera, A. F., & Bernal, E. M. (2001). *Swimming against the tide: The poor in American higher education (No. 2001-1)*. New York: The College Board.
- The Pell Institute. (2004, Fall). *Indicators of opportunity in higher education: Fall 2004 status report*. Washington, DC.
- Tierney, W. (1992). An anthropological analysis of student participation in college. *The Journal of Higher Education*, 63(6), 603-618.

- Tierney, W.G. (1999). Models of minority college-going and retention: Cultural integrity versus cultural suicide. *The Journal of Negro Education*, 68(1), 80-91.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research, *Review of Educational Research*, 45, 89-125.
- Tinto, V. (1986). Theories of student departure revisited. In J. Smart (Ed.), *Higher Education: Handbook of Theory and Research* (Vol. 2, pp. 359-384). New York: Agathon Press.
- Tinto, V. (1987, 1993). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago: University of Chicago Press.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago: University of Chicago Press.
- Tinto, V. (1997). Classrooms as communities: Exploring the educational character of student persistence. *The Journal of Higher Education*, 68(6), 599-623.
- Tinto, V. (1998). *Learning communities and the reconstruction of remedial education in higher education*. Paper presented at the Conference on Replacing Remediation in Higher Education.
- Tinto, V. (2000). Taking retention seriously: Rethinking the first year of college. *NACADA Journal*, 19(2), 5-10.
- Tinto, V. (2002). Learning better together: The impact of learning communities on college success. Retrieved December 20, 2009, from <http://aiea.syr.edu/vtinto/Files/Learning%20Better%20Together.pdf>
- Tinto, V. (2004). *Student retention and graduation: Facing the truth, living with the consequences*. Washington, D.C.: The Pell Institute.

- Tinto, V., & Engstrom, C. (2010, February 12). Pathways to Student Success Project. from <http://pathways.syr.edu/participatingprograms.htm>.
- Tinto, V., & Engstrom, C. (2010, April 13). Pathways to Student Success. Retrieved from <http://pathways.syr.edu/>.
- Tinto, V., & Goodsell-Love, A. (1993). Building community. *Liberal Education*, 79(4), 16-21.
- Tinto, V., & Goodsell-Love, A. (1995). *A longitudinal study of learning communities at LaGuardia Community College*. University Park, PA: National Center of Postsecondary Teaching, Learning, and Assessment.
- Tinto, V., Goodsell-Love, A., & Russo, P. (1994). *Building learning communities for new college students*. University Park, PA: The Pennsylvania State University, National Center on Postsecondary Teaching, Learning, and Assessment.
- Tinto, V., & Russo, P. (1994). Coordinated studies programs: Their effect on student involvement at a community college. *Community College Review*, 22(2), 16-26.
- Van Gennep, A. (1960). *The rites of passage*. Chicago: University of Chicago Press.
- Velicer, W. F., & Fava, J. L. (1998). Effects of variable and subject sampling on factor pattern recovery. *Psychological Methods*, 3(2), 231-251.
- Warburton, E. C., Bugarin, R., Nunez, A., & Carroll, C. D. (2001). *Bridging the gap: Academic preparation and postsecondary success of first-generation students (NCES 2001-153)*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Waycaster, P. (2001). factors impacting success in community college developmental mathematics courses and subsequent courses. *Community College Journal of Research and Practice*, 25, 403-416.

- Weismann, E., Butcher, K. F., Schneider, E., Teres, J., Collado, H., & Greenberg, D. (2011). Learning communities for student in developmental math: Impact studies at Queensborough and Houston community colleges. New York: Columbia University, Teachers College, National Center for Postsecondary Research.
- Wilcox, K., del Mars, R., Stewart, B., Johnson, A., & Ghery, D. (1997). The package course experience and developmental education. *Journal of Developmental Education*, 20(2), 18-26.
- Windham, P. (1995). *The importance of work and other factors to attrition: A comparison of the significancy and odds ratios for different outcomes*. Paper presented at the 24<sup>th</sup> Annual Conference of the Southeastern Association for Community College Research, Asheville, NC. (ERIC Document Reproduction No. ED 385312).
- Witmer, M. (1991). An analysis of self reports and test scores as a measure of student success in a linked course. Unpublished study.
- Wolf-Wendel, L., Ward, K., & Kinzie, J. (2009). A tangled web of terms: The overlap and unique contribution of involvement, engagement, and integration to understanding college student success. *Journal of College Student Development*, 50(4), 407-482.
- Yosso, T. J. (2005). Whose culture has capital? A critical race theory discussion of community cultural wealth. *Race, Ethnicity, and Education*, 8(1), 69-91
- Yosso, T. J., Parker, L., Solorzano, D. G., Lynn, M. (2004). From Jim Crow to affirmative action and back again: A critical race discussion of racialized rationales and access to higher education. *Review of Research in Education*, 28, 1-25.
- Zhao, C. M., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Education*, 45(2), 115-138..

## Curriculum Vita

# Joshua Grant McIntosh

P.O. Box 382312 • Cambridge, Massachusetts 02238 • (617) 694-6110 • [joshua\\_mcintosh@harvard.edu](mailto:joshua_mcintosh@harvard.edu)

---

### ADMINISTRATIVE EXPERIENCE

---

#### Associate Dean

##### *Harvard College, Harvard University (July 2009 – present)*

- Responsible for the financial management, human resources management, information technology, policy development and implementation, and assessment for all programs and services associated with housing, residential life, student activities, public service, BGLTQ student life, the Women's Center, and the Harvard Foundation for Intercultural and Race Relations
- Oversee the coordination, management, and strategic planning of a \$12.6 million budget comprised of unrestricted and restricted funds
- Oversee the development of programs and policies which serve as revenue sources, including \$5.3 million in summer housing programs and \$48 million in term-time housing
- Direct human resource functions associated with 100 full-time staff and residential faculty and 275 graduate student employees
- Lead the College in information technology initiatives related to student services
- Oversee the design and implementation of assessment strategies including the development of student learning outcomes and performance indicators
- Develop and implement College policies and procedures related to student services
- Hire, supervise, train, and evaluate professional and administrative staff
- Advise the Dean of the College and Office of Admissions on enrollment management related matters
- Serve as an advisor to the House Capital Renewal project team which is responsible for the planning and implementation of a large-scale renovation of all upperclass residential facilities
- Lead long-range planning for the Office of Student Life to ensure its alignment with the strategic direction of the College
- Provide senior level on-call crisis management coverage for 6,600 undergraduate students
- Serve on College and University committees

#### Assistant Dean

##### *Harvard College, Harvard University (February 2006 – June 2009)*

- Responsible for the administration and operations of an academically-integrated undergraduate upperclass housing system with a capacity of 4,900
- Hired, supervised, trained, and evaluated professional and administrative staff, and oversaw thirteen House Administrators on housing, financial, and human resource related matters
- Oversaw and coordinated the development and management of a \$5.6 million budget comprised of unrestricted and restricted funds, and oversaw all human resource functions
- Oversaw the management and coordination of parent programs, including Freshman Parents Weekend and Junior Parents Weekend
- Developed system-wide housing and residential life policies and procedures, and collaborated with faculty House Masters and Resident Deans regarding the implementation of such policies and procedures
- Oversaw the coordination of data exchanges with the Registrar's Office, Dining Services, and Student Accounts Receivable to ensure accurate housing assignment data and billing
- Responded to, and mediated, high-level conflicts with employees, students, and parents
- Collaborated with the Advising Programs Office to support the implementation of academic advising structures and programs in the upperclass houses
- Collaborated with the Office of the General Counsel to assist with risk reduction, and to respond to complaints/allegations
- Collaborated with the Office of Physical resources and Planning to develop and implement strategic plans
- Provided senior level on-call crisis management coverage for 6,600 undergraduate students

### **Senior Associate Director**

#### ***Office of Greek Life and Experiential Learning, Syracuse University (January 2005 – January 2006)***

- Responsible for the overall administration, operations, and assessment for an office responsible for working with 280 student organizations
- Supervised, trained, and evaluated administrative support staff, Assistant Directors, and Graduate Assistants
- Developed budget projections and oversaw the management of a \$2.5 million budget
- Managed human resource functions including staff recruitment and selection, payroll, and performance review processes
- Collaborated with administrative and academic departments to create and implement policies and procedures for 280 recognized student organizations
- Coordinated and supervised the assessment of administrative processes, training programs, and leadership initiatives
- Supervised the development and implementation of campus-wide leadership initiatives
- Supervised the advising of University Union, the campus programming board, and the management of the yearbook staff
- Advised the Interfraternity Council and the twenty affiliated fraternities
- Created, implemented, and advised the Peer Review Board, an accountability system, for fraternities violating national, University, and Interfraternity Council policies and procedures
- Collaborated with fraternity alumni, national headquarters staff, and parents to respond to the needs of fraternities
- Created and implemented a formal fraternity recruitment process including marketing, policies, and procedures
- Negotiated and processed artist and vendor contracts for fraternities and recognized student organizations
- Provided on-call crisis management coverage for a fraternity and sorority system of 2,000 students

### **Associate Director**

#### ***Office of Greek Life and Experiential Learning, Syracuse University (June 2002 – December 2004)***

- Responsible for the overall administration, operations, and assessment for an office responsible for working with 280 student organizations
- Supervised, trained, and evaluated administrative support staff, a Budget Coordinator, and an Assistant Director
- Developed budget projections and oversaw the management of a \$2.5 million budget
- Created, implemented, and managed a program for assessing administrative processes and student learning outcomes for training and leadership programs
- Managed human resource functions including staff recruitment and selection, payroll, and performance review processes
- Managed office technology inclusive of website development and maintenance, software upgrades, and technical support
- Served as the judicial hearing officer for fraternities and sororities violating University policies and procedures
- Supervised the yearbook staff, including oversight of all marketing and businesses processes
- Advised Order of Omega, a Greek leadership honorary organization
- Advised the Student Association Finance Board, which was responsible for funding student organization events
- Served as a program consultant for service and honorary student organizations
- Advised twelve fraternities and sororities, inclusive of chapters affiliated with the Interfraternity Council, Latino Greek Council, Multicultural Greek Council, National Pan-Hellenic Council, and Panhellenic Council
- Provided on-call crisis management coverage for a fraternity and sorority system of 2,000 students

### **Coordinator for Assessment**

#### ***Office of Residence Life, Syracuse University (July 2001 – June 2002)***

- Responsible for the overall development and implementation of departmental assessment initiatives
- Supervised, trained, and evaluated one Graduate Assistant and one graduate student intern
- Managed the assessment operational budget



- Oversaw the development and management of the assessment web page
- Utilized Infopoll software to develop and implement web-based surveys, and SAS and SPSS software to analyze data
- Facilitated focus groups and interviews for assessment initiatives and conducted document analysis
- Created formal qualitative and quantitative assessment reports, including a monthly University-wide assessment publication, *The Orange Slice*
- Developed and facilitated training sessions, which provided knowledge and skill development in assessment practices
- Served as a consultant to other University administrators to develop and implement assessment projects
- Lead the development of strategic assessment plans

### **Residence Director**

***Office of Residence Life, Syracuse University (June 1999 – June 2002)***

*Responsibilities (July 2001 – June 2002):*

- Responsible for the overall management of two co-ed residence halls housing 100 first-year and upper-class students
- Supervised, trained, and evaluated four Resident Advisors and indirectly supervised one Assistant Residence Director
- Facilitated the development and implementation of a substance-free theme community and a learning community, Women in Science and Engineering (W.I.S.E.)

*Responsibilities (June 1999 – June 2001):*

- Responsible for the overall management of a co-ed residence hall housing 470 first-year students
- Supervised, trained, and evaluated one Graduate Residence Coordinator, one full-time Administrative Assistant, and twelve Resident Advisors
- Managed student salary, operational, and programming budgets
- Served as a judicial hearing officer for students violating University policies and procedures
- Provided on-call crisis management coverage for 1,470 students

### **Resident Director**

***Department of Housing and Residence Life, Appalachian State University (August 1997 – May 1999)***

- Responsible for the overall management of a co-ed residence hall housing 300 predominately upper-class students
- Supervised, trained, and evaluated seven Resident Assistants
- Advised hall council, monitored programming budget, and provided leadership development opportunities for students
- Conducted disciplinary intervention meetings for students violating University policies and procedures
- Provided on-call crisis management coverage for 2,200 students

### **Conference Director**

***Department of Housing and Residence Life, Appalachian State University (May 1998 – August 1998)***

- Managed a residence hall used for summer conferences and supervised main desk operations
- Performed administrative duties including check-in/out, occupancy reports, and billing reports
- Supervised Conference Assistant staff and provided on-call crisis management coverage for conference participants

## **STAFF SELECTION, TRAINING, AND DEVELOPMENT EXPERIENCE**

---

**Assistant Dean of Student Life Search Committee**, Chair, Office of Student Life, Summer 2011

**Director of BGLTQ Student Life Search Committee**, Chair, Office of Student Life, Summer 2011

**House Administrator Search Committee**, Chair, Office of Student Life, Summer 2009 and Spring 2010

**Director of Residential Life Programs Search Committee**, Chair, Office of Residential Life, Spring 2007

**Manager of the Student Center Search Committee**, Office of Student Life and Activities, Summer 2006

**Associate Director Search Committee**, Chair, Office of Student Centers and Programming Services, Summer 2004

**Assistant Director for Assessment Search Committee**, Dean of Students Office, Fall 2002

**Computer Consultant Search Committee**, Office of the Associate Vice President, Summer 2002

**Assistant Director Search Committee**, Office of Judicial Affairs, Spring 2003 and Spring 2002  
**Staff Training and Development Planning Committee**, Chair, Office of Residence Life, Fall 2000 – Spring 2001  
**Staff Training Committee**, Department of Housing and Residence Life, Fall 1998 – Spring 1999  
**Staff Selection Committee**, Department of Housing and Residence Life, Fall 1997 – Spring 1998  
**Staff Development Committee**, Department of Housing and Residence Life, Fall 1997 – Spring 1998

## **RELATED COMMITTEE EXPERIENCE**

---

**Safety Committee**, Chair, Harvard College and Graduate School of Arts and Sciences, Summer 2009 – Present  
**Standing Committee on Advising and Counseling**, Faculty of Arts and Sciences, Fall 2009 – Present  
**House Finances Working Group**, Chair, Office of Student Life, Fall 2009 – Spring 2010  
**Advising Programs Office Advisory Committee**, Harvard College, Fall 2007 – Spring 2009  
**Rooming Exceptions Committee**, Chair, Freshman Dean's Office, Spring 2006 – Spring 2009  
**Residential Space Assessment and Planning Committee**, Harvard College, Spring 2006 – Fall 2007  
**Gender Neutral Housing Committee**, Chair, Office of Residential Life, Spring 2006 – Spring 2007  
**House Life Assessment Committee**, Office of Residential Life, Spring 2006 – Spring 2007  
**Dining Services Committee**, Office of Residential Life, Spring 2006 – Spring 2007  
**R.A.P.E. Center Advisory Committee**, Division of Student Affairs, Spring 2004 – Fall 2006  
**Feinstone Multicultural Grants Review Committee**, Division of Student Affairs, Spring 2002 – Spring 2005  
**Assessment Committee**, Division of Student Affairs, Fall 2001 – Fall 2006  
**Strategic Communications Subcommittee**, Division of Student Affairs, Spring 2003 – Spring 2004  
**Technology Committee**, Division of Student Affairs, Fall 2002 – Spring 2004  
**Civic Engagement Essay Review Committee**, Center for Public and Community Service, Spring 2003  
**Assessment Committee**, Chair, Office of Residence Life, Fall 1999 – Spring 2002  
**Research and Information Committee**, Association of College and University Housing Officers, Summer 2002  
**Learning Community Assessment Steering Committee**, Division of Student Affairs, Fall 2001 – Spring 2002

## **TEACHING EXPERIENCE**

---

**Adjunct Faculty, HED 721 – Theory and Appraisal of College Student Development – 3 Credit Hours**  
School of Education, Syracuse University, Spring 2005  
**Adjunct Faculty, EDU 600 – Understanding Educational Research – 3 Credit Hours**  
School of Education, Syracuse University, Fall 2003  
**Instructor, CLS 100 – College Learning Strategies – 1 Credit Hour**  
School of Education, Syracuse University, Fall 2000  
**Instructor, HPC 3400 – Leadership Development – 3 Credit Hours**  
Department of Human Development, Appalachian State University, Fall 1998  
**Instructor, HPC 2200 – Life and Career Planning – 2 Credit Hours**  
Department of Human Development, Appalachian State University, Spring 1998

## **RELATED EXPERIENCE**

---

**Editorial Board Member – Journal of College and University Student Housing**  
Association of College and University Housing Officers, July 2003 – July 2009  
**Co-Coordinator – Identities in Motion LGBTQ Undergraduate Group**  
Counseling Center, Syracuse University, September 2004 – May 2005  
**Consultant – NASPA Salary Survey Data Analysis**  
NASPA, Research Division, September 2004 – May 2005  
**Consultant – On-line Membership Application and Student Housing Profile Questionnaire**  
Association of College and University Housing Officers, September 2001 – January 2002  
**Consultant – Student Internship Program Assessment**  
daVinci Project, Lockheed Martin Corporation, May 2000 – August 2000

## **SELECTED ASSESSMENT PROJECTS**

---

### **Student Employment and Financial Aid**

Dean's Office, Harvard College, Summer 2011 – present

### **House Life**

Office of Student Life, Harvard College Spring 2007 – Spring 2011

### **Leadership Programs,**

Office of Greek Life and Experiential Learning, Syracuse University, Fall 2002 – Spring 2005

### **Association of Fraternity Advisors/Educational Benchmarking**

Office of Greek Life and Experiential Learning, Syracuse University, Spring 2005

### **Fraternity and Sorority Recruitment**

Office of Greek Life and Experiential Learning, Syracuse University, Spring 2004 and Spring 2005

### **Student Involvement and Leadership**

Student Activities Office, Syracuse University, Spring 2002

### **Relationship Abuse**

R.A.P.E. Center, Syracuse University, Spring 2002

### **Diversity Climate**

Office of Residence Life, Syracuse University, Spring 2001 and Spring 2002

### **Student Financial Management**

Office of Residence Life, Syracuse University, Spring 2002

### **Higher Education Graduate Students Experience**

Association of College and University Housing Officers, Spring 2002

### **Housing and Residence Life Professionals Experience**

Association of College and University Housing Officers, Spring 2002

### **Resident Advisor Experience**

Office of Residence Life, Syracuse University, Fall 2001

### **Community Development**

Office of Residence Life, Syracuse University, Fall 1999 – Fall 2001

### **Learning Community Impact**

Office of Residence Life, Syracuse University, Spring 2001 – Fall 2001

### **Academic Integrity**

Division of Student Affairs, Syracuse University, Spring 2001

## **SELECTED PRESENTATIONS**

---

### **“Diversity and Inclusion in Higher Education”**

Global Diversity Leadership Conference, Cambridge, MA, September 2011

### **“Best Practices in Crisis Management”**

Dartmouth College Senior Administrators In-Service, Hanover, NH, December 2010

### **“The Role of Technology in Strategic Planning and Organizational Change”**

Keynote Speaker, StarRez Global User Conference, Portland, OR, July 2010

### **“Strategic Planning and Assessment”**

NASPA Mid-Level Institute, Manchester, NH, May 2010

### **"Creating Systematic Change through Applied Assessment in Student Affairs"**

National Student Affairs Assessment and Retention Conference, Atlanta, GA, June 2005

### **"Substance Use and Abuse: A Call for Values Congruence"**

Sigma Phi Epsilon New York State EDGE Conference, Ithaca, NY, April 2005

### **"Fostering Organizational Change: Diversity Education and Identity Validation"**

Association of College Unions International Region II Conference, Syracuse, NY, November 2004

### **"Responding to the Health Needs of Students Affiliated with Social Greek-Letter Organizations"**

New York State College Health Association Conference, Syracuse, NY, October 2004

### **"Race Matters: Rethinking the College Classroom"**

School of Liberal Arts, Morrisville State College Faculty Development, April 2004

### **"Senior Student Affairs Officer and Director Earnings: What Affects the Variance in Salary?"**

National Association of Student Personnel Administrators Conference, Denver, CO, March 2004

**"Utilizing Qualitative Methods to Assess Programs and Services"**

Division of Student Affairs, Syracuse University, December 2003

**"Emerging Trends in State Anti-Hazing Policies: Implications for Campuses"**

National Association of Student Personnel Administrators Conference, St. Louis, MO, March 2003

**"Racial Identity Development: Theory to Practice"**

HED 721 – Student Development Theory, Guest Lecturer, Syracuse University, February 2003 and 2004

**"Graduate Student Survey: Housing and Residence Life Recruitment"**

Association of College and University Housing Officers Conference, Leadership Assembly, Orlando, FL, July 2002

**"Learning Communities and Intellectual Development"**

Association of College and University Housing Officers Conference, Orlando, FL, July 2002

**"Learning Communities: Assessing Academic Climate and Community Development"**

Association of College and University Housing Officers Conference, Orlando, FL, July 2002

**"The Evolving Organization: Developing and Assessing Learning Communities through Collaboration"**

National Association of Student Personnel Administrators Conference, Boston, MA, March 2002

**"Diversity: Assessing Campus Climate and Programs"**

National Assessment Institute, Indianapolis, IN, November 2001

---

**SELECTED PUBLICATIONS**

---

McIntosh, J. & Peckskamp, T. (2010). Critical learning community resources for educating campus stakeholders. In T. Peckskamp and C. McLaughlin (eds.), *Building community: Stories and strategies for future learning community faculty and professionals* (pp. 109-114). Syracuse, NY: The Graduate School Press of Syracuse University.

Ridzi, F. & McIntosh, J. (2006). Is diversity policy inherently contradictory? Exploring racial and class year differences in perception of campus climate and best ways to support a racially diverse student body. In R. M. Moore III (Ed.), *African Americans and Whites: Changing Relationships on College Campuses* (pp. 193-206). Lanham, MD: University Press of America.

Engstrom, C. M., McIntosh, J. G., Ridzi, F. M., & Kruger, K. (2006). Salary determinants for senior student affairs officers: Revisiting gender and ethnicity in light of institutional characteristics. *NASPA Journal*, 43(2), 243-263.

McIntosh, J. G. & Peckskamp, T. L. (March-April 2006). Can't live and learn without it: Readings to educate stakeholders on living-learning benefits. *Talking Stick*, 23(4), 30-31, 56.

McIntosh, J. G. & Peckskamp, T. L. (June 2004). Qualitative assessment practices in student affairs. *Talking Stick*, 21(7), 23, 25-26.

St. Onge, S., Peckskamp, T., & McIntosh, J. (2003). The impact of learning communities on residential communities and the roles of resident advisors. *Journal of College and University Student Housing*, 32(1), 16-23.

McIntosh, J. & Young, S. (December 2001). Diversity: Assessing residential climate and programs. *www.reslife.net*.

McIntosh, J. G. & Swartwout, D. (July-August 2001). Lights on, lights off: The rhythm of residence life. *About Campus*, 6(3), 25-27.

McIntosh, J. & Triano, M. (July 2001). Words of wisdom: Facilitating your first floor meeting. *www.reslife.net*.

St. Onge, S. & McIntosh, J. (June 2001). To assess or not to assess...What was that question? *Talking Stick*, 18(8), 12.

Brown, D., St. Onge, S., & McIntosh, J. (June 2000). Why do students get involved? *Talking Stick*, 17(8), 14, 16.

---

**EDUCATION**

---

**Doctor of Philosophy, Higher Education Administration**

Syracuse University, Syracuse, New York – Candidate

**Master of Arts, College Student Development**

Appalachian State University, Boone, North Carolina

**Bachelor of Science, Biology**

Elon University, Elon, North Carolina

## **ADDITIONAL TRAINING**

---

### **Focused Leadership**

Harvard Executive Leadership Program, Harvard University, present

### **Enhancing Financial Management: Ethics and Accountability**

Human Resources, Harvard University, April 2006

### **Situational Leadership**

Human Resources, Syracuse University, November 2002

### **Emerging Trends in Higher Education Law**

Higher Education Program, Syracuse University, September 2002

### **PeopleSoft**

Human Resources, Syracuse University, July 2002

### **Access Database Development I and II**

Computing and Media Services, Syracuse University, April 2002

### **Advanced Microsoft Excel**

National Seminars Group, Rockhurst University Continuing Education Center, April 2002

### **Relational Database Design**

Computing and Media Services, Syracuse University, March 2002